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19
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KEMP & CO.'S

Prescribers

Pharmacopeia.

A SYNOPSIS

OF THE MORE RECENT REMEDIES,
OFFICIAL AND UNOFFICIAL,

WITH A

THERAPEUTIC INDEX

AND A

RÉSUMÉ of the B. P. ADDITIONS, 1890.

BY A MEMBER OF THE

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

SECOND EDITION.

(Revised Reprint.)

KEMP & CO., LTD.,

Wholesale and Manufacturing Chemists,

BOMBAY.

London Office:—84, Leadenhall St., E. C.

PRESS OPINIONS

This unpretentious little book is intended to supply medical men in India with information regarding the properties and doses of the various new drugs and preparations. In a small space it gathers together most of the results of recent researches. It has evidently been very carefully compiled, and so far as we have tested it, appears to be thoroughly trustworthy.—*Lancet*.

The second edition of this useful and compact little book has been brought up to date, and includes the drugs added to the *B.P.* in 1890, as well as a large number of new unofficial substances. Its primary purpose is implied in the name *Prescribers' Pharmacopæia*. It gives a short account of all the important old and new drugs, along with full information as to the newest and best forms of administering and prescribing them. In addition, there is a copious therapeutic index, besides short chapters on urine-testing, hypodermic medication, and pills. Although primarily intended for medical men practising in India, it is calculated to be of service to practitioners in all parts of the world.—*British Medical Journal*.

The *Prescribers' Pharmacopæia* is the second edition of a little work brought out by Messrs. Kemp and Co., Manufacturing Chemists, Pombay, chiefly for the use of medical men in India. It is compiled by a member of the Pharmaceutical Society of Great Britain, and is a synopsis of the more recent remedies, with therapeutic notes and references brought up to date. It appears to be carefully executed, while its size makes it very portable. The book may be recommended as a convenient and handy volume to medical men in all parts of the world.—*Practitioner*.

We are glad to see that this work has reached a second edition. The work is of a convenient size, neatly got up, well arranged, and contains much valuable information on the many medicines recently introduced to the notice of the profession.—*Edinburgh Medical Journal*, Aug. '91.

This is a handy little book, giving in a concise form much valuable information regarding the drugs and remedies introduced into pharmacy and therapeutics during the past few years. It appears to have been primarily compiled for the use of medical practitioners in India, but it has proved equally valuable as a reference

book for medical men in all parts of the world, specially as the author has summed up the conclusions adopted, from the entire literature of each subject—a feature that favourably distinguishes the work from most others of the same kind.

The work has been fully revised and re-written, and the arrangement of the monographs has been a little altered upon the first edition, so as to facilitate reference. Pharmaceutical details are, as a rule, omitted, the intention being in the first place to furnish the physician with a guide in prescribing.—*Therapist (London)*.

COMPENSATIVE as this title may appear for so tiny a volume, it cannot be said to be in excess of the contents, for some of the medicines mentioned can hardly be included among the "more recent remedies," nor do they occur in the *B.P.* additions. The compiler of the book has evidently a very creditable acquaintance with current medical and pharmaceutical literature, especially in view of the fact that his residence is in Bombay, and of this he makes good use.

The information given respecting the numerous chemical compounds that have recently been introduced into medicine is inclusive, and such as will be of great service to the prescriber who wishes to acquaint himself with the claims made on their behalf. It is interesting in this respect to learn that the remedies of this class that so far appear to have met with most favour in India are aristol, orexin, phenacetin, exalgine, chloralamide and sulphonal, some of these being already largely prescribed. In an appendix there are concise chapters on "Pills," "Urinary Testing," "General Testing," "Hypodermic Medication," etc., and a "Therapeutic Index" is followed by a full "General Index"—*Pharmaceutical Journal*.

This work differs so materially from the first edition that it is scarcely just to associate the two together. The book now before us is double the bulk of the first one, is more handsomely produced, and the matter is nearly all new. Fully 300 pages of the Pharmacopœia are devoted to *materia medica*, the articles being arranged alphabetically, and under every article, where appropriate, are given exceptionally good lists of preparations, derivatives, and the like, with doses and best methods of administration. Official preparations are disposed of briefly, so that more space is provided for explicit information regarding such articles as have not received Pharmacopœial recognition, or which are introduced from foreign sources. The book is particularly strong in therapeutic notes and references, the latter introducing us to a field of literature almost unknown in this country—namely, the Anglo-Indian medical press. Incidentally we may note that the author (Mr Thomas Stephenson) has revised and adapted to the requirements of a tropical climate much of the matter relating to solubilities, etc. One is apt to overlook that point, but

it is of great importance to those who have to do dispensing when the thermometer at the dispensing-counter indicates 100° F. In these conditions the physical characteristics of some bodies, and the strengths of saturated solutions, are prone to cast ridicule on what English text-books say. Another touch of local colouring is given in notes and hints regarding Indian drugs which may fitly replace European favourites.

So large a field is now covered by new remedies that it is difficult for the medical practitioner to keep abreast of the progress in this department of medicine. Apart from the botany of the *materia medica nova*, of which but few physicians have any knowledge, many of the remedies are taken from departments of chemistry which the medical curriculum does not cover. It may be granted that many prescribers succeed in getting good results with synthetic remedies without troubling themselves as to what chemical group they belong—such is empirical prescribing—but the fact remains that justification of the use of these remedies resides in a general knowledge of the relation of the chemical constitution of the drugs to their action upon the animal organism. It is in regard to this that Mr. Stephenson succeeds in giving much concise information so far as the more important synthetic remedies are concerned, and the latest introductions are included. Although the author has not written the book for pharmacists, there are many useful pharmaceutical memoranda in it. The appendix contains a review of the *B. P.* additions, hypodermic medication, notes on pills, and on urinary and general testing, and a therapeutic index. The general index is exceptionally full. We have noticed very few errors in the book, and, while the collated information has been abstracted with intelligence, the author inserts many little bits from personal observation and experiment which we shall take the liberty of quoting by-and-by.—*Chemist and Druggist.*

ALTHOUGH addressed to Indian prescribers, this work is of considerable interest to pharmacists in all climates, both at home and abroad, and will be useful to our readers wherever they may be located. The facts relating to the drugs with which the British pharmacist is familiar, are very clearly stated and admirably arranged, while the information to be gleaned concerning Oriental remedies, which are less known to our home readers, adds additional value to the hand-book. Very full particulars are given concerning the latest European additions to our *Materia Medica*, so that the work takes its place in the front rank of works of reference for the pharmacist, since it is thoroughly brought up to date in this respect, while the matter is so condensed that the size of the volume is retained within the limits of a handy pocket-book. In many instances very useful recipes and prescriptions for administering the less familiar remedies are given, and full therapeutic notes are added in each case. There is also a very good appendix on urine testing, a therapeutic index of diseases and remedies, which includes most of

more recent additions of recognised value, and finally, a useful index of contents. The author is to be congratulated in having compiled so efficiently such a mass of useful information in the limits of his modest little work.—*British and Colonial Druggist.*

This handy manual has been thoroughly revised, and this second edition of the work was prepared under the care of T. Stephenson, Ph.C., who is connected with the firm who publish the work. Kemp and Co. are the progressive firm who lead in the line of pharmacy in India, and, though they are wholesale and manufacturing chemists, are fully alive to all that interests both pharmacy and medicine. The edition was published but a month or so ago, yet we have the copy to hand and it includes all the new remedies that have made any lasting reputation. It is thoroughly up to the times in all that pertains to such a hand-book; its information is reliable and exceedingly valuable—*Pharmaceutical Record (New York).*

This excellent little pocket-book, the first edition of which we reviewed last year, has already been launched into its second edition. This fact bespeaks push and energy, and a determination to keep perfectly abreast of the times; it means solid enterprise, and it deserves success for many reasons. The *Prescribers' Pharmacopædia* is a model of convenience to the busy medical practitioner. It presents a *résumé* of every innovation in pharmacology and therapeutics, and renders needless the wearying task of wading through endless periodicals for a knowledge of the changes and improvements in pharmacy. Mr. Thomas Stephenson, M.P.S., deserves special credit for his careful editing of this valuable pocket-companion, and we congratulate Messrs. Kemp and Co. on the success of their efforts to present the medical profession with such a useful little work.—*Indian Medical Record.*

THE *Prescribers' Pharmacopædia*, 1891, by a member of the Pharmaceutical Society of Great Britain, is issued by Kemp and Co., the well-known chemists of Bombay, and is now in its second edition. The first edition was disposed of in fifteen months, the preface of the second is dated March 1891, and in size it has grown from something over 200 to more than 400 pages. It has been compiled, printed, and bound in Bombay, but nothing about it would betray that it had not come from one of the best European houses.

It has been compiled with special reference to the conditions of a tropical climate, and for prescribers, thus smoothing the relations of the latter with the pharmacist. Solubilities and other physical characters have all been tested and confirmed. The real value of such a compilation can only be tested by daily use. To a cursory glance it is obvious that great care has been taken to bring it up to date and to condense with judgment. It is a remarkable

able enterprise, well carried out, and to those of our readers who inhabit semi-tropical and tropical districts it will have special value.—*Chemist and Druggist of Australasia.*

THE Prescribers' Pharmacopæia.—It is not surprising that a second edition of this useful hand-book has been called for. The general character of the work is now well known, but it may be remarked that it has been enlarged from over 200 pages in the first edition to over 400 pages, and that it contains the most recent information on new drugs and cures. Koch's remedy for tuberculosis, for instance, is noticed, and brief but explicit directions are given for carrying out the method of treatment followed by Dr. Koch. This is only one paragraph in a very useful chapter on hypodermic medication, and there are also chapters in the recent additions to the British Pharmacopœia and on chemical tests. The book, which is published by Messrs. Kemp and Co., Limited, Bombay, being compiled by Mr. T. Stephenson, one of their staff, is well worthy the attention of Indian practitioners, for whom it is specially designed. —*Pioneer.*

A new edition of this admirable little work, much improved and enlarged and brought up to date, has just been issued by Messrs. Kemp and Co., Ltd. It is one of the handiest and most complete manuals of its kind that has yet been issued, and it should prove of the greatest value to those to whom it is especially addressed. The compiler of the volume is Mr. Stephenson (of Kemp and Co.'s Byculla Establishment), a member of the Pharmaceutical Society of Great Britain, and he seems to have done his work with the greatest possible care and completeness. Within the compass of a handy pocket volume of 400 pages, Mr. Stephenson gives an alphabetical synopsis of the newest remedies, together with brief practical notes on their therapeutic uses with their formulas, derivatives, doses, and suggestions as to the methods of prescribing them.—*Times of India.*

ing to so. Mr. Kemp and Company had any doubt, on the requiring the first edition of their *Prescribers' Pharmacopæia*, as to the reception it would meet with, its Drugs in India, and the rapidity with which, as it became generally known, the copies left the hands of the public. It proved that it had been found of considerable value, as it undoubtedly is. The little book having met with such a cordial reception, and the edition being all disposed of, the publishers decided to issue another edition, and that has been so revised and extended as to make it even more complete than the last. The suggestions of several physicians of note, who have taken an interest in the brochure, and who have recognised that it has supplied a want much felt among medical men in India, have been of much aid in the re-compiling of the work. Since the publication, too, of the first edition, the writer has kept himself thoroughly in touch with medical and pharmaceutical literature, verifying the solubilities,

characters, tests and preparations of the drugs treated of; and therefore the book as a pharmacopœia is rendered still more valuable. A point of great importance to be noted is that much of the matter relating to solubilities, etc., has been revised and adapted to the requirements of a tropical climate, while a feature of the book is the introduction of those Indian drugs in more common use as well as a few suggestions for the adoption of some of the European and American remedies. The list of pills has been revised and enlarged, and two new articles on Hypodermic Medication and Testing, respectively, have been included in the appendix. It is altogether a well and carefully arranged book, small, and easily carried about in the pocket. To medical gentlemen, especially those engaged in the Mofussil, it is invaluable.—*Bombay Gazette*.

MESSRS. KEMP AND CO., LTD., of Bombay, have just issued a second and revised edition of this useful little work. The fact, that the whole of the first edition was disposed of in less than fifteen months, shows that the well-deserved popularity we then predicted for it, has been realized. The authorship of the work has again been entrusted to Mr. T. Stephensen, M.P.S., one of the firm's pharmaceutical staff, who has re-written the entire work, and extended it to 450 pages, over double the size of the former issue. The thoroughness with which this work has been done is exemplified on page 309, for instance, where we find a description of Dr. Koch's new lymph for tuberculosis, showing that the work is quite up to date. Several new articles, and a large number of new drugs (including a number of Indian remedies) have been added, and we feel sure that this book will be to Indian practitioners what such works as those of Squire and Martindale are at home. The work is neatly got up, and is published at a very reasonable price.—*English Mail*.

The Prescribers' Pharmacopœia, published by Messrs. Kemp and Co., Ltd., Wholesale and retail chemists, Bombay, is a handy little work meant for the use of the ordered household should be with the definitions and derivations, with the information of dose." Intended chiefly for medical help, and as most of us, unfortunately, on time or another necessitate "a prescription," we think it a good thing to be able to find out at a glance at this little book what it really is we are absorbing. We consider this volume a marvel of lucidity, and one that anybody, however unversed in the mystery of medicine, can readily comprehend.—*Empress*.

The Prescribers' Pharmacopœia—In our last issue we omitted to acknowledge the receipt from Messrs. Kemp of this useful little work. It contains over 430 pages devoted to a description, and the uses of a large number of the drugs and chemicals utilised in scientific and medi-

cal work. The substances are arranged in alphabetical order, and are therefore conveniently placed for reference. It is of interest to every student of science, and specially valuable to the medical practitioner.—*Indian Textile Journal.*

THE Prescribers' Pharmacopœia.—Messrs. Kemp and Co., Ltd., the well-known manufacturing chemists of Bombay, have issued a second edition of their *Prescribers' Pharmacopœia*, which promises to be even more successful than the first. The work has been carefully revised throughout, and important improvements and additions have been introduced into the list of medicinal remedies, while great attention has been devoted to making the little book as useful as possible to the prescriber as a work of reference. The new introductions into medicine, consisting mainly of antipyretics and hypnotics are dealt with in this *vade mecum*, and a list of the Indian drugs more commonly in use is also contained therein. The little volume is very neatly got up, and is of so convenient a size that it can be carried in the ordinary coat-pocket. Messrs. Kemp and Co. deserve the best thanks of medical men and others interested in pharmacy for this valuable little publication.—*Statesman.*

ENCOURAGED by the cordial reception that has attended the first edition of the *Prescribers' Pharmacopœia*, the publishers have placed at our disposal a second and enlarged edition of this handy brochure.

The utility of a compilation such as this admits of no question, and doubtless every prescriber, who is desirous of being conversant with the latest developments of pharmaceutical discovery, will avail himself or herself of a copy. The pharmacopœia has, we understand, been compiled by Mr. T. Stephenson, one of the Company's staff. Comparing the present with the former edition we observe evidence of careful revision, and we find some concise information as to the sources, botanical and chemical, of various drugs, while much of the matter relating to solubilities, etc., has been revised and adapted to the requirements of a tropical climate. A noteworthy feature in the book is the introduction of those Indian Drugs in more common use, as well as a few suggestions for the adoption of Indian substitutes for some of the European and American remedies.

The wide sphere of usefulness which this little work is so well qualified to fill will be readily apparent when reflection is brought to bear on the valuable announcements attracting the attention of therapeutists that have been made during the past year. The Influenza Epidemic, the Hyderabad Chloroform Commission (page 79), Sir Joseph Lister's Cyanide Dressing (p. 158), Professor Koch's remedy for tuberculosis (p. 300), the impurities of Artificial Salicylic Acid (p. 16), and many others are detailed in the pages before us, while amongst new remedies which are already largely prescribed in this country are Exalgine, Sulphonal, Orexin, Aristol, Phenacetin and

Chloralamide. Two new articles on Hypodermic Medication and Testing, respectively, with a review of the British Pharmacopœia Additions published last December are embodied in an appendix.—*Madras Advertiser.*

THE Prescribers' Pharmacopœia, 1891.—Last year saw the first appearance of this useful little work, which the publishers evidently intend to send forth annually. They have already found more room for improvement than appeared to us to be available, and the new edition contains a great deal of valuable information, in addition to that which appeared in the 1890 issue. Encouragement has not been wanting. Wherever it has gone the work has met with a cordial reception, and has been found to be a handy book of reference for medical men of all sorts. It is brought up to date. For instance the uses of hypodermic injections of strychnine in cases of snake-bite is referred to, and a paragraph quoted from the *Indian Medical Record* of October 1890. The same journal of September 1890 is quoted as mentioning *Injectio Cocainie Hydrochloratis Hypodermica* as having been used without one failure or any ill-effects in nearly 100 cases of scorpion-bite. A copious index adds to the utility of the little work, which should find a place in the pockets of medical men of all classes.—*Madras Times.*

MESSRS. KEMP AND CO. have just issued a new and enlarged edition of the *Prescribers' Pharmacopœia*, a work written by Mr. Stephenson, one of the Company's pharmaceutical staff. That this useful little manual has supplied a distinct want is evident from the very cordial reception it met with from the public on its first appearance, the whole of the earlier edition having been disposed of in less than fifteen months. For the present issue the work has been carefully revised and entirely re-written by the original compiler, and all the later additions to the British Pharmacopœia have been introduced. The value of the manual is much enhanced by a well arranged and complete therapeutic and general index, in alphabetical order, which much facilitates reference. The hand-book deserves a wide circulation amongst medical men. We may add that the get-up of the volume is extremely creditable, both as regards binding and printing.—*Bombay Catholic Examiner.*

MESSRS. KEMP AND CO., wholesale and manufacturing Chemists, have, through the ability of their Chemist, Mr. Stephenson, produced this book for the guidance of medical practitioners in India. It embraces in short accounts all the drugs of the British Pharmacopœia, as well as Indian drugs, their botanical characters, official preparations, doses, and therapeutic uses. The relative value of the new antipyretics, antipyrin, antifebrin, and phenacetin is briefly but pithily given. A supplementary list of recently introduced drugs, chemical tests, and the indexed treatment of diseases, concludes a charm-

ing little volume which is exceedingly well printed, and should be in the pockets of all practitioners in this country. Mr. Stephenson has spared no pains in consulting all the periodicals for the physiological and therapeutical effects of the different medicaments, and the book is thoroughly reliable and up to date. We heartily congratulate Messrs. Kemp and Co. for this innovation in supplying a handy guide for the Indian medical world, and we are certain that this volume will most deservedly obtain a large sale.—*Mahasihha*.

CONTENTS.

	PAGE
Preface	xv
Introduction	xvii
List of Abbreviations	xx
The Prescribers' Pharmacopœia	1
Supplementary List of more Recent Drugs ..	303
Appendix—	
Review of the B. P. Additions	305
Hypodermic Medication	308
Pills	311
Testing	315
The Metric System	324
Therapeutic Index	326
General Index	347

Preface to the Second Edition.

THE cordial reception accorded to the first edition of this Work has assured us that such a book supplies a want much felt among medical men in India. The entire edition having been disposed of in less than fifteen months, we decided to bring out a revised and extended edition without delay. The work has, as on the last occasion, been entrusted to one of our pharmaceutical staff, who is a Pharmaceutical Chemist and a member of the Pharmaceutical Society of Great Britain, and every facility has been afforded this gentleman to obtain the latest and most accurate information on the subjects treated of.

We desire to record our indebtedness to those Physicians who have kindly come forward with their suggestions, and whose experience has been a material aid to the Compiler in his work; and we again invite the medical men of India to assist us, and, through the medium of this little work, render some assistance to their professional brethren.

KEMP & CO., LTD.

BOMBAY,
March 1891.

The entire edition having been sold out, the work has been reprinted; and the opportunity has been taken of making a few necessary alterations and additions in the text.

Noremberg 1891.

INTRODUCTION.

Pharmacists, from their practical acquaintance with drugs, are in a position to render much assistance to medical men in their practice, especially in connection with the more recent introductions into therapeutics. The writer has kept this fact in view in compiling the following pages, and has endeavoured to make it as far as possible a reliable book of reference to the Prescriber. Having kept thoroughly in touch with medical and pharmaceutical literature since the publication of the First Edition, and practically verified to the best of his ability the solubilities, characters, tests, and preparations of the drugs treated of, he trusts that the modest claims of the book as a Prescribers' Pharmacopæia will be in some measure realised.

The work has been entirely revised and re-written, and a slightly different style adopted in arranging the articles, so as to render the subjects more readily available for reference. The pharmaceutical details found in other works of this class have as far as practicable been omitted, the book being intended mainly as a guide in prescribing, although some concise information as to the sources, botanical and chemical, of the various drugs has not been thought out of place. Much of the matter relating to solubilities, etc., has been revised and adapted to the requirements of a tropical climate, while a feature of the book is the introduction of those Indian Drugs in more common use, as well as a

few suggestions for the adoption of Indian substitutes for some of the European and American remedies.

The list of Proprietary Remedies has been omitted, as well as the Formulary of the British Pharmaceutical Conference as a distinct list, both being included in the body of the work. In the latter case the publication of the Additions to the British Pharmacopœia, which has adopted several of the most important formulae, renders such a list unnecessary.

The writer has been fortunate in receiving from England a copy of the British Pharmacopœia Additions of 1890, published last December, in time to include all the items in these pages. A review and epitome of this publication appears on page 305.

The list of Pills has been revised and enlarged, and two new articles, on Hypodermic Medication and Testing, respectively, have been included in the Appendix. The Therapeutic Index has also been subjected to careful revision.

For some time after the publication of the First Edition the new introductions into medicine seemed to consist entirely or nearly so of antipyretics and hypnotics: Benzanilide, Hydracetin, Methacetin, Thermifugin, Euphorine, etc., on the one hand, and Chloralamide, Uralium, Hypnal, Somnal, etc., on the other hand, being all of quite recent introduction. The past year (1890), however, has given indications of a wider range attracting the atten-

tion of therapeutists, and a succession of startling, and in some cases valuable, announcements have been made. The Influenza Epidemic, the Hyderabad Chloroform Commission (page 79), Sir Joseph Lister's Cyanide Dressing (page 143), Professor Koch's remedy for tuberculosis (page 309), the impurities in Artificial Salicylic Acid (page 16), and several others have all monopolised attention for a time, while the work of the year has been fittingly crowned by the publication already referred to of the additions to the British Pharmacopœia.

In addition to the remedies described in the Second Edition, the present Reprint contains notes on the following : Æthylene Bromide; Antacid Lozenges; Antikamnia; Apyonin; Auri Iodidum, Carvacrol Iodide; Dermatol; Europhen; Ferri et Magnesii Sulphas; Halviva; Iodphenin; Kreat; Linimentum Exsiccans; Microcidine; Phenocoll; Randia Dumetorum; Thuja Occidentalis; Salicyl-Sulphonic Acid; Liebreich's and the Zinc Chloride Remedies for Tuberculosis, as well as additional notes and references in the case of almost all the more recent drugs already included.

While the indiscriminate rushing after new drugs is by no means commendable, still it is right that all new introductions should receive a fair trial, many valuable additions to therapeutics having been acquired by this means; and as conditions vary in different patients, solitary statements are seldom reliable.

List of Abbreviations.

- B. M. J.** British Medical Journal.
B. M. R. British Medical Record.
B. P. The British Pharmacopœia, 1885.
B. P. (Ad.) Additions to the British Pharmacopœia, 1890.
B. P. C. Unofficial Formulary, British Pharmaceutical Conference.
C. & D. The Chemist and Druggist (London).
Edu. M. J. Edinburgh Medical Journal.
H. Helbing's Pharmacological Record (London).
I. M. G. Indian Medical Gazette (Calcutta).
J. S. C. I. Journal of the Society of Chemical Industry (London).
• **K.** Kemp's London Notes (Bombay).
L. The Lancet (London).
o **M.** Martindale and Westcott's Extra Pharmacopœia, 1890 (London).
M. R. Indian Medical Record (Calcutta).
M. T. Medical Times (New York).
N. I. The New Idea (Detroit).
P. G. The German Pharmacopœia.
P. I. The Indian Pharmacopœia, 1868.
Pg. Ind. Pharmacographia Indica, by Dymock, Warden, and Hooper, 1890 (Bombay).
Ph. J. The Pharmaceutical Journal (London).
Ph. Rec. The Pharmaceutical Record (New York).
Pr. The Practitioner (London).
Ring. Ringer's Handbook of Therapeutics (London.)
Sq. Squire's Companion to the British Pharmacopœia, 1890 (London).
T. G. Therapeutic Gazette (Philadelphia).
T. H. Pharmacopœia of the Hospital for Diseases of the Throat (London).
U. S. P. Pharmacopœia of the United States of America, 1883.
Y. B. The Year-Book of Pharmacy (London).
- The figures put after an abbreviation refer to the date of issue, or to the year, volume, and page, thus—
L. '88, ii. 105, signifies—*The Lancet*, Volume II. of 1888, page 105.

THE Prescribers' Pharmacopœia.

ABIES CANADENSIS.

Hemlock Spruce.—The bark of the Canadian Fir-tree (*Abies Canadensis*) collected from young trees.* It is recommended as an astringent in the form of

Extractum Abietis Canadensis Liquidum.—This is used diluted to various strengths, as an astringent in leucorrhœa, sores, haemorrhoids, catarrh, mouth affections, etc. Internally it is given in severe cases of dysentery.
Dose—15 to 60 minims.

An American preparation,† highly concentrated, is most frequently met with. *Dose*—5 to 10 minims.

Glycerinum Abietis.—1 in 4. More readily miscible with water than the Extracts.
Dose.—1 to 2 drachms.

ABRUS, P. I.

Jequirity, Indian Liquorice.—The seeds of *Abrus precatorius*, Linn. (Leguminosæ), an Indian shrub; small, of a scarlet colour with black patch on the hilum. They are harmless when eaten, but poisonous when applied to open wounds. An infusion is used for the cure of granular lids; applied to the inner surface, it sets up purulent ophthalmia varying in intensity with the frequency of the applications. Opinion is some-

* Known also as *Pinus Canadensis*. A liquid proprietary preparation goes by the same name (see page 238).

† Geddes' Fluid Extract of Hemlock Bark.

what divided as to the cause of this action, it having until recently been held that this was due to the bacteria always present in the infusion. Warden and Waddell of Calcutta have recently separated a nitrogenous substance which they termed *Abri*, and which was a powerful poison when injected. This has since been found to consist of two proteids, *Paraglobulin* and *α-Phyt-albumose*, which resemble snake venom in their action and properties, except that they are destroyed by a temperature under that of boiling water.

Infusum Abri (Oph. Hosp.).—1 in 12*½*. To be brushed on the inner surface of the lids, or applied on a linen compress.

Liquor Abri. Fluid Jequirity.—Strength 12 per cent. An American preparation for the extemporaneous preparation of the Infusion. It is to be diluted with 3 to 5 times its bulk of water and 2 drops applied once a day.

Pasta Abri (Dr. Shoemaker's).—Strength 1 in 4. For the treatment of affections of the skin dependent upon exuberant granulations and proliferating cell growths. Must be used with caution, applied with a camel's hair brush.

When the action of Jequirity is too severe it may be controlled by the free application of hot water and very dilute solutions of corrosive sub-limate.

ACALYMPHA INDICA.

A euphorbiaceous plant, common throughout India. Used as an expectorant and emetic, and recommended for children as safe, certain, and speedy. It has little tendency to act on the bowels or depress the vital powers. A cataplasm of the leaves is recommended for syphilitic ulcers, and as a means of relieving the pain and irritation arising from insect bites. The plant is said also to act as a laxative.

Succus Acalyphæe.—The expressed juice of the fresh plant. *Dose*—A teaspoonful (for an infant).

Extractum Acalyphæe Liquidum.—*Dose*—10 to 60 minims.

A. C. E.—See page 80.

ACETAL.

Di-ethyl Aldehydate. $C_2H_5(OC_2H_5)_2$. The di-ethyl ether of Ethylene. When pure it is a colourless liquid, with a peculiar agreeable odour. Soluble in water about 1 in 18, and miscible with ether and alcohol. Boils at 219° F.; Sp. gr. 0·8314.

Its action is that of a soporific, but it possesses no special advantages over others of the same class. It has not been much used, owing to the unpleasant taste and smell of the impure commercial specimens usually met with.

Dose—1 to 3 drachms.

ACETANILID.—See page 37.

ACETOPHENONE.

Hypnone ; Phenyl-methyl-ketone ; Acetyl-benzene. $C_6H_5CO.CH_3$ —A colourless or slightly yellowish liquid, with a pungent taste and a peculiar persistent bitter-almond odour. Sp. gr. 1·027. Crystallises at about 39° F. Insoluble in water; soluble 1 in 90 of glycerine; freely miscible with alcohol, ether, chloroform, and olive oil.—*Sq.*

Acts as a hypnotic, but its value is doubtful. It does not act where there is pain. In alcoholic subjects its effects are superior to Paraldehyde or Chloral, but not constant, failing entirely in some cases (*Dujardin-Beaumetz*). Useful as an inhalation in phthisis, 5 drops every 4 hours.—*T. G. Feb. '88.*

Dose—2 to 8 minims. Its action on the mucous membrane of the mouth being caustic, it is best given dissolved in ten times as much Almond Oil in capsules. May also be given in Syrup or Almond Emulsion. Should not be used hypodermically.

ACIDUM BORICUM, B.P.

Boric Acid; Boracic Acid.—Prepared by the action of Sulphuric Acid on Borax. In white crystals, unctuous to the touch, soluble 1 in 25 of cold water, 1 in 3 of boiling water, 1 in 5 of glycerine, and 1 in 20 of rectified spirit.

A mild antiseptic, used as a dressing for granulating and suppurating surfaces. As a mouth-wash, 10 to 15 grains to 1 oz. water; as an eye-wash for purulent ophthalmia and conjunctival congestion, 2 to 5 grains to an ounce of water; as a paint for the throat, 1 in 5 of glycerine, are all useful formulæ. As a dusting powder it checks the foetor of perspiration. It is largely used in some places for the preservation of meat, milk, &c., and forms the basis of several patented preparations for this purpose, as *Glacialine*, *Aseptin*, etc. Internally it has been used to sterilize the urine, before operating on the urethra.—*B. M. J.* '88, i. 1165. It is also used in the form of suppositories, 3 grains each, for pruritus, and as pessaries 10 grains each.

Antiseptic Dressings of Boric Acid.

Boric Lint.—About 50 per cent.

Boric Wool.—About 40 per cent.

Boric Gauze.—25 to 40 per cent.

Unguentum Acidi Borici, B.P.—1 in 7. As a dressing for wounds, burns, eczema, etc., it is used spread on lint and applied to the part.

Salve Mulls of Boric Acid are spread with 10 per cent. ointment.

An ointment made with Lanolin is useful in children's eczema. If there is much induration,

to 1 per cent. Salicylic Acid may be added.—*B.M.J.* '88, ii. 896.

Boroglyceride.—A patented preparation. A tough, deliquescent mass, prepared by heating Glycerine with Boric Acid. Soluble in water and alcohol. Solutions in water are used, 1 in 20, as an antiseptic in operative surgery, and in purulent ophthalmia (*L.* '83, i. 273); 1 in 40 as a preservative of meat, milk, etc.

Liquor Magnesii Boratis.—A combination of Magnesia and Boric Acid, containing about 1 part of Boric Acid in 6. Said to be the composition of *Antifungin*. Has been recommended in diphtheria as a paint.—*B.M.J.* '87, ii. 526. This solution crystallises out 48 hours after preparation. The improved formula given in Squire's 'Companion' also crystallises, though not to the same extent.

Thiersch's Antiseptic Solution contains Boric Acid 12, Salicylic Acid 2, in water 1000. It is a useful surgical antiseptic.

ACIDUM CARBOLICUM, B.P.

Carbolic Acid; Phenic Acid; Phenic Alcohol; Phenol. $\text{HC}_6\text{H}_5\text{O}$.—A coal-tar product. In crystals, colourless, but having a tendency to become of a pink or brown tint. Melts at about 100° F., and upon the addition of 10 per cent. of water becomes hydrated and remains liquid. Soluble 1 in 12 of water at 80° F.; at 155° F. it mixes with water in all proportions, but separates on cooling. It is freely soluble in alcohol, chloroform, ether, fixed and volatile oils, glycerine, etc.; in vaseline about 1 in 20.

Its properties are those of a powerful antiseptic, disinfectant and local anaesthetic. As a sedative it checks flatulence, and arrests diarrhoea; 3 grains 3 times a day, taken in water, relieve the itching of psoriasis.—*Sq.* Dose—1 to 3 grains in pill.

Carbolic Acid is a neurotic poison. It whitens and shrivels the membranes with which it comes in contact, acting as a corrosive and also producing speedy narcosis. The urine becomes greenish or black with a perceptible odour of phenol. *Antidotes*—Stomach pump and emetics; Olive Oil and strong Coffee; Atropin. Sulph. grain hypodermically; Acid. Sulph. dil., 10 minimis every hour.—*L.* '80, i. 702. In poisoning by absorption from antiseptic dressings, apply a 5 per cent. solution of Sodium Sulphate.—*Pr.* xxiv. 300. Oil neutralises its caustic action externally.

Carbolic Acid is met with in the following varieties:—

Absolute Phenol.—In dry detached crystals. This form is the most suitable for internal administration.

Synthetic Carbolic Acid.—Prepared by a patented process from a benzene product by a German firm. In crystals, having a weak, pure smell, no tarry odour, free from water, melting at 106° to 108° F., and giving with water a clear solution, which at 5 per cent. strength is almost inodorous.

Chemically identical with ordinary Carbolic Acid. Disinfecting power slightly inferior, but the difference so slight as to be of practically no value.—*Ph. J.*, Mar. 29 '90.

Its chief advantages are—greater purity, absence of disagreeable odour, higher melting point.

No. 1. Carbolic Acid.—The same as the preceding as regards quality, but occurs in crystalline masses. It is most suitable for mixing with water, etc., for surgical purposes. The solution has no disagreeable odour.

No. 1. Carbolic Acid, Liquid (*Acidum Carbolicum Liquefactum, B. P.*)—The above with the addition of 10 per cent. of water. Liquid at ordinary temperatures. The most convenient form for simple application as a caustic.

No. 2. Carbolic Acid (*Crystals and Liquid*).—Similar to but less pure than No. 1 and slightly less soluble in water. Suitable for use in sick-rooms, a solution of 1 in 20—40 of water being sprinkled about and used for general disinfecting purposes.

No. 4. Carbolic Acid (*Liquid*).—Colourless or pale straw-coloured. Contains about 80 per cent. of Cresylic Acid, and is suitable for disinfecting drains, urinals, etc. May be used 1 in 40 of hot water.

No. 5. Carbolic Acid (*Liquid*).—A dark coloured liquid suitable for stable use, etc.

The antiseptic system of surgery, or *Listerism*, depends, or originally depended, upon the free and thorough use of Carbolic Acid in all surgical operations. For such purposes the following dressings will be found serviceable:—

Antiseptic Carbolic Acid Dressings.

Carbolic Gauze	5½ p. c.
Carbolised Wool and Lint	6 p. c.
Carbolised Catgut Ligatures ..	Nos. 0, 1, 2, & 3; No. 0 is finest.
Carbolised Tow	10 p. c.
Carbolised Ligature Silk	5 p. c.
Mackintosh Sheeting.	
Oiled Silk Protective	5 p. c.

Medicinal Preparations of Carbolic Acid.

Carbolates	} See INDEX.
Sulphocarbonates	

Camphorated Carbolic Acid.—A useful application in ulcerous sores of man or animals. Very serviceable as an application in ulcer of the os and cervix uteri, in chronic inflammation of the uterus and cervix with excoriation, and in chronic uterine catarrh.—*Ring.*

Capsules of Carbolic Acid.—Contain one drachm each in a glass tube. Suitable for preparing lotions, etc., extemporaneously, one Capsule to a pint of water being a convenient strength.

Gargarisma Acidi Carbolici.—Two grains to 1 ounce. For sore-throat attended with foetor of breath.

Glycerinum Acidi Carbolici, B. P.—1 to 4. Mixed with an equal bulk of water, may be used as a mouth-wash for foetid breath, also in diphtheria.—*Ring.* Given internally in pertussis, $\frac{1}{2}$ minim for under 1 year; $1\frac{1}{2}$ minims for 2 to 5 years.—*B.M.J.* May 11, '89. *Dose*—5 to 10 minims in water.

Injectio Acidi Carbolici Hypodermica.—2 to 5 per cent. For anthrax.—*L.* '87, ii. 1186. In erysipelas.—*Ring.*

Iodine Solution, Carbolised.—A colourless solution. Containing 2·2 grains Carbolic Acid and 0·3 grain Iodine per fluid ounce. Useful as a gargle or inhalation, as a paint in diphtheria, also as a douche in ozæna and for intra-uterine injection. A similar preparation containing 10 per cent. of Iodine has been given internally for Asiatic cholera in doses of 10 minims every half hour hypodermically.—*L.* Sept. 29, '83.

Iodised Phenol.—1 to 4. For intra-uterino medication, and as an application for ringworm of the scalp.

Lotio Acidi Carbolici.—4 grains to 1 ounce. A useful preventive against mosquito bites, if mixed with a little Glycerine and applied to the face and hands. Also relieves the pain and itching of such bites.

Mistura Acidi Carbolici.— $1\frac{1}{2}$ minim with 2 minims Tinct. Iodi in one fluid ounce. Recommended for typhoid fever. *Dose*—One ounce every 4 hours.

Carbolic Oil.—1 to 7, or any strength desired. As a dressing.

Lund's and other *Catheter Oils* contain Absolute Phenol dissolved in a mixture (varying proportions) of Olive and Castor Oils.

Pastils of Carbolic Acid.— $\frac{1}{2}$ grain in each, prepared with a gelatine basis; same use as the gargle, but more convenient.

Perles of Carbolic Acid.—1 grain each in oil. *Dose*—1 or 2.

Pilula Acidi Carbolici.—2 grains each. For flatulence with great distension and no pain; also in diarrhoea and as an antipyretic. *Dose*—One 3 times a day.

Preservative Solution for anatomical subjects, contains Carbolic Acid in Glycerine and Methylated Spirit.

Phenol Sodique.—A French preparation used as an antiseptic by dentists. It is closely represented by the English preparation known as

Liquor Sodii Carbolatus (Sol. Sodii Phenatis), which contains about 8 per cent. of Phenol in combination with Caustic Soda. It possesses the antiseptic and anaesthetic properties of the Acid, and is much less caustic.

Smelling Salts, Carbolised.—For hay fever, influenza, etc.

Salve Mulls of Carbolic Acid.—10 per cent.

Soaps, Carbolic.—*Nursery*, 5 per cent.; *Toilet*, 10 per cent.; *Medical*, 20 per cent. For stable use, etc., cheaper varieties are prepared.

Suppositoria Acidi Carbolici, B.P.—1 grain each.

Tribromphenol.—Prepared by the reaction of Carbolic Acid with Bromine. In odourless soft white crystals, scarcely soluble in water, but soluble in alcohol, etc., as well as in alkaline solutions. It is used as an antiseptic. For surgical dressings, the powder is sprinkled on cotton wool and applied to the part, or it may be used in the form of an ointment containing 10 grains to the ounce of Vaseline. *Dose*—1 to 2 grains.

Trichlorphenol, Trichlorphenic Acid.—A derivative of Carbolic Acid prepared from the latter by acting on it with Chlorinated Lime. In white volatile crystals, with a pungent taste and tarry odour. It is insoluble in water, but

soluble in alcohol, glycerine, oils, etc., and forms soluble salts with bases.

Trichlorphenol has been used as a disinfectant, and is said to be 25 times stronger than Carbolic Acid. A 2 per cent. solution of the Magnesium Salt has been used in purulent ophthalmia.—*B. M. J.* '85, i. 69.

Trochisci Acidi Carbolici, T.H.—One grain each. Antiseptic and stimulant.

Unguentum Acidi Carbolici, B.P.—1 in 19. In parasitic skin diseases, and for smearing the hands previous to operations, etc.

Vapor Acidi Carbolici, T.H.—20 drops of No. 1 Liquid Acid to 1 pint of water at 140° F. Useful in pertussis. Lessens and disinfects the abundant expectoration in bronchitis and gangrenous lung. As a spray, 3 drops to 1 ounce of water.

Sulpho-Carbolic Acid.—See page 48.

ACID. CATHARTIC.—See page 261.

ACID. CHRYSOPHANIC.
—See page 44.

ACIDUM CRESYLICUM.

Cresylic Acid; Cresol; Methyl-Phenol; $C_6H_5CH_3OH=C_6H_5O$.—A coal-tar product. Occurs as a colourless or slightly yellow liquid, with a tarry odour. Soluble 1 in 80 of water, freely soluble in alcohol, ether, glycerine and olive oil. It is antiseptic, slightly

caustic, and said to be superior to Carbolic Acid and much less poisonous. Used as an inhalation in whooping cough.—*Sq.*

Cresol Salicylas, Para-Cresol Salicylate; Cresalol.—The para-phenylie ether of Cresylic Acid. In white crystals similar to Salol in appearance and medicinal properties. Insoluble in water, freely soluble in alcohol. Has been found serviceable in rheumatism, and has been suggested for cholera.—*Ph. J. Mar. 2, '89.*

Dose—Not fixed ; 4 grammes have been given to a dog and repeated 4 times in 24 hours, without harm.

ACID. GYNOCARDIC.—See page 137.

ACIDUM HYDROFLUORICUM.

Hydrofluoric, Fluorhydric, or Fluoric Acid.—An aqueous solution of Hydrofluoric Acid gas containing about 30 per cent. of the gas. Owing to its action on glass, it requires to be kept in leaden or gutta-percha bottles.

Has been administered by inhalation in phthisis, patients inhaling air which has been passed through a mixture of Acid 1, Water 3, with good results.—*L. '89 i. 496.*

Acidum Fluoricum Dilutum, T. H.—Contains $\frac{1}{2}$ per cent. of the above. In this form the Acid does not injure the stomach, nor affect glass vessels if kept therein for some time. Recommended for goitre in doses of 15 to 60 minims. Given in doses of 30 minims, gradually increased to 2 drachms, proved very successful. In no case, however, could more than 2 drachms be tolerated.—*L. '81, i. 448, 497, 537.* **Dose**—15 to 60 minims.

Ammonii Fluoridum.—Administered in solution. **Dose**— $\frac{1}{2}$ to $\frac{1}{2}$ grain.

Ferri Fluoridum, Ferrous Fluoride.—A purplish powder. *Dose*— $\frac{1}{50}$ to $\frac{1}{2}$ grain.

Quininæ Fluoridum. *Dose*— $\frac{1}{50}$ to $\frac{1}{2}$ grain. (See page 245.)

A solution of Ammonium Fluoride, 4 grs. to 1 oz., in doses of 5 minims gradually increased to 75 minims, has been recommended for hypertrophy of the spleen. Also Ferrous Fluoride in a similar manner, as well as Quinine Fluoride. The results were most successful.—*I. M. G.*, April '82; *Pr. June '87.*

ACIDUM LACTICUM, B.P.

Lactic Acid.—A syrupy, colourless liquid, obtained by the lactic fermentation of sugar. It contains about 75 per cent. of real acid, $\text{HC}_3\text{H}_5\text{O}_3$. It is freely miscible with water, alcohol and ether, but is nearly insoluble in chloroform. Sp. gr. 1.21. It coagulates milk and albumen.

It is used in the pure state as a paint for lupus, but is apt to cause pain.—*Ed. M. J.*, Jan. '88. Also recommended internally, in doses of 10 minims twice a day in phthisis to allay cough and quench thirst. As a spray, **Nebula Acidi Lactici, T.H.**, 1 in 16 of water, is very useful for dissolving the membranous exudation in diphtheria.

Dose—5 to 20 minims or more, well diluted.

Acidum Lacticum Dilutum B.P.—3 in 20. *Dose*— $\frac{1}{2}$ to 2 drachms.

Teaspoonful doses of a 2 per cent. solution of Lactic Acid (equal to 8 minims Acid. Lactic. Dil.) have been recommended in infantile diarrhoea.

Quininæ Lactas. (See page 246.)

Zinci Lactas. (See page 300.)

Calcii Lactas.—*Dose*—1 to 5 grs.

Ferri Lactas.—*Dose*—2 to 10 grs. (See page 121.)

In combination with Iron and Lime, as Lactophosphate, Lactic Acid is given internally as a stomachic and tonic. The following are the best forms for administration :—

Syrupus Calcii Lactophosphatis.—
Dose—1 to 2 drachms.

Syrupus Calcii et Ferri Lactophosphatum.—The above, with the addition of one grain Lactate of Iron to each drachm.
Dose—1 to 2 drachms.

ACID. OLEIC.—See page 198.

ACIDUM OSMICUM.

Osmic Acid; Osmium Tetroxide; Perosmic Acid. OsO_4 .—In yellow crystals, which give off an intensely irritating vapour attacking the eyes and nostrils. Taste acid and burning. Soluble about 1 in 50 of water, but decomposes in contact with alcohol or ether. The aqueous solution should be protected from light and stored in bottles free from lead. Osmic Acid is poisonous and powerfully oxidising, decomposing Iodide of Potassium, and converting Alcohol into Aldehyde and Acetic Acid.

Liquor Acidi Osmici.—1 per cent. Chiefly used as a stain for fat and nerve fibre in histological work, and for hardening tissues. It blackens most substances owing to reduction of metallic Osmium. This solution has been used hypodermically for sciatica, neuralgia, goitrous swellings, etc. *Dose*—4 to 6 minims, hypodermically.

Potassium Osmate.— $\text{K}_2\text{OsO}_4 + 2 \text{H}_2\text{O}$.—A dark violet-red crystalline powder, readily soluble in water, forming a yellow solution. Has been given in epilepsy either along with or alternating with Bromide of Potassium.

Dose— $\frac{1}{64}$ grain in pill. A 1 per cent. solution is used hypodermically for the same purposes as Liquor Acidi Osmici.

ACIDUM PHENYLACETICUM.

Phenylacetic Acid; Alphatoluic Acid; $C_6H_5 \cdot C_2H_3O_2$.—A coal-tar product. In white crystals having a sour aromatic taste and persistent odour, and acid reaction. Soluble 1 in 6 of alcohol.

Dose—1 to 3 grains in solution. Given in phthisis, 10 to 20 minimis of the alcoholic solution, 3 times a day, produced in the patients a gain of weight, strength, and colour, partly due to diminution of cough and expectoration. Indicated in cases of tubercularization. No unpleasant effects.—*Ph. J. Mar. 2.'89.*

ACIDUM PHENYLPRO- PIONICUM.

**Phenylpropionic Acid; Hydrocinna-
mic Acid; Homotoluic Acid.**—A coal-tar product, $C_9H_{10}O_2$. In acicular crystals of a reddish white colour, insoluble in water, but soluble 1 in 6 of alcohol. Taste and odour very similar to Phenylacetic Acid, but has a less decided acid reaction.

Dose—1 to 3 grains in solution.

10 minim doses of the alcoholic solution, well diluted, increased to 20 minimis, were given to patients suffering from phthisis. Produced no unpleasant effects, but gain of weight, colour, and vigour, without, however, any diminution in cough or expectoration. Indicated in excavation cases.—*Ph. J. Mar. 2.'90.*

ACIDUM PICRICUM.

**Picric Acid; Carbazotic Acid; Trinitro-
phenic Acid; Trinitrophenol; $C_6H_3(NO_2)_3O$.**—Prepared by the action of Nitric Acid on

Carbolic Acid. It occurs in yellow crystals, intensely bitter, and soluble about 1 in 90 of water and 1 in 16 of rectified spirit.

Dose— $\frac{1}{2}$ to 2 grains.

Liquor Acidi Picrici.—1 per cent. aqueous solution. Given in cases of ague and albuminuria, but is apt to colour the skin, conjunctiva, and urine yellow.—*B. M. J.* '84, ii. 1109.

A 6 to 1000 solution of Picric Acid is recommended as an external application in erysipelas, lymphangitis and eczema. To be applied 5 to 10 times a day.—*L. April 1, '89.*

The Ammonia salt only is used medicinally, the Potassium salt being explosive.

Ammonii Picras, Carbazotate of Ammonia.—A yellow crystalline salt, recommended as a valuable antiperiodic in ague and malarial fevers of India, and an efficient substitute for Quinine.—*L. Feb. 19, '87.*

Dose— $\frac{1}{2}$ to $\frac{2}{3}$ grain in pill or sweetened mixture.

ACIDUM

PYROGALLICUM.

Pyrogallic Acid ; Pyrogallol; C₆H₆O₃.*

—Prepared from Gallic or Tannic Acid by heat. In light flaky crystals, which darken by exposure, and must therefore be kept away from light. Soluble 1 in $2\frac{1}{2}$ of water, freely in alcohol. Largely used in photography; also in conjunction with Nitrate of Silver as a hair dye.

It is given like Gallie Acid for haemoptysis, but in smaller doses, and used also as an ointment for psoriasis, but must be applied with caution.

Dose— $\frac{1}{2}$ to $1\frac{1}{2}$ grains in solution or pill (freshly prepared).

Unguentum Acidi Pyrogallici, Jarisch's Ointment.—1 to 8. Used for psoriasis, applied twice a day, the parts being afterwards covered with flannel. Efficacious but painful,

and is apt to cause toxic symptoms. The internal use of Acid. Nitro-hydrochlor. Dil. is recommended to obviate the toxic effects of its external application.—*Ed. M. J.* Oct. '86.

ACIDUM SALICYLICUM, B.P.

Salicylic Acid. $\text{HC}_6\text{H}_5\text{O}_2$. In white needle-shaped crystals, taste sweetish, soluble about 1 in 500 of water; 1 in 4 of spirit; 1 in 2 of ether; 1 in 120 of olive oil; 1 in 200 of glycerine. 20 grains may be dissolved in an ounce of water by the addition of about 30 grains Borax, or 40 grains Citrate of Potassium. Acetates of Ammonium and Potassium have also been recommended for the same purpose, but they act simply by forming Salicylates and setting free Acetic Acid; the use of Salicylate of Sodium, therefore, is preferable. The aqueous solution gives a violet colour with Ferric salts. Salicylic Acid is prepared chiefly from Carbolic Acid by heating with Caustic Soda and passing Carbonic Acid gas through the liquid; the Salicylate of Sodium thus formed being decomposed by means of an acid. It may also be obtained from the oils of wintergreen (*Gaultheria procumbens*), sweet birch (*Betula lenta*) and an Indian plant (*Andromeda Leshnaultii*), the first named plant being chiefly used. Until recently the latter or *natural* Salicylic Acid has been preferred as purer, the *artificial* acid often containing traces of carbolic acid and similar impurities, but there is less need now for such a distinction, as perfectly pure acids are now manufactured by the carbolic process, a process which has the recommendation of being much cheaper. The *natural* acid occurs in needle-shaped crystals resembling strychnine in appearance, and larger than those of the *artificial* acid, which is usually supplied in form similar to quinine. Either may be used as 'Acidum Salicylicum, B. P.', and when pure the two are chemically identical.—*Ph. J.* May 26, '88; *C. & D.*, Nov. 15, '90; *K. Feb. '91.*

Salicylic Acid is a powerful antiseptic, and as such is largely used for surgical dressings. A solution (1 in 500) is also useful as a gargle and mouth wash in diphtheria.—*B. M. J.* '89, ii. 802. As an antiseptic it is less irritating than carbolic acid, though unlike the latter it is not volatile. It is, however, said to be three times as powerful in preventing fermentation.—*Ring.*

Antiseptic Dressings of Salicylic Acid.

Salicylic Gauze..... 4 per cent.

Salicylic Lint 4 per cent.

Salicylic Wool 4 and 10 per cent.

Salicylated Isinglass Plaster.—On thin linen, rendered adhesive by wetting. May be easily removed, and is much more adhesive than the old sticking plaster.

Pulvis Salicylicus cum Talco, P. G.—3 per cent. A dusting powder, specially suitable for perspiring feet.

Salicylic Acid Suet.—2 per cent. An application to relieve soreness caused by riding.

Salicylic Silk.—10 per cent.

In addition to its power as an antiseptic, Salicylic Acid has the property of destroying callosity, and for this purpose the following combinations are used:—

Salicylic Plaster Mulls.— $\frac{1}{2}$ grain to the square inch combined with Creasote. Used in the treatment of thickened epidermis.—*L. Dec. 1, '83.* Also combined with Ext. Cannab. Ind., 15 per cent.

Collodium Salicylicum.—With or without Ext. Cannab. Ind., an excellent application for hard and soft corns, and the basis of most nostrums for this purpose.

More active preparations are made by adding Chloride of Zinc, 30 grains to 1 ounce; Hydrarg. Perchlor. 16 grains 1 ounce; or Lactic Acid, 1 drachm to 1 ounce.

Unguentum Acidi Salicylici, B.P.—
1 in 28. An antiseptic ointment, suitable for eczema, acne, etc.

Camphora Salicylata, Salicylate of Camphor.—A compound of Salicylic Acid and Camphor. An unctuous, crystalline mass, which liquefies when rubbed on the skin. Slightly soluble in water and glycerine, more so (about 1 in 20) in fats and oils. It becomes hydrated by boiling with water, forming a heavy oily liquid. Used as an antiseptic dressing, also for lupus and rodent ulcers.

Salicylated Camphor Wool contains 8 per cent. An antiseptic wound dressing.

Internally the chief use of Salicylic Acid is as an antirheumatic. Its effects are very similar to quinine, and it can be more easily tolerated. It appears in the urine as Salicyluric Acid. It is generally given as Salicylate of Sodium (see Sodium) 5 grains of which are equal to 4 of acid, and which does not produce the same unpleasant effects. Salicin and Salol (see pages 255, 256) are also much preferred to Salicylic Acid.

Salicylates.—See INDEX.

Diuretin.—(Theobromine Sodio-Salicylate), see page 288.

Salicin.—See page 255.

Salol.—See page 256.

Iodo-Salicylic Acid and Di-Iodo-Salicylic Acid.—Iodine compounds of Salicylic Acid, having the combined action of the two drugs. They occur as white crystalline powders, slightly soluble in water, but soluble in alcohol, ether and oils. The latter is preferred as being richer in iodine. It is a powerful antiseptic, analgesic, and antithermic, and has succeeded where salicylates have failed.

Dose—20 grains increased to 60 grains daily, in cachets.—*Ph. J. Dec. 28, '89.*

ACID. SCLEROTIC.—See
page 109.

ACONITINA, B.P.—

Aconitine.—**Aconitia.**—An alkaloid obtained from the root of the Monkshood (*Aconitum Napellus*) and other species. It occurs in white, usually amorphous lumps, and varies both in solubility and potency according to the species of Aconite employed and the process of manufacture. From *Aconitum Napellus* is obtained Aconitine, which, under certain conditions, splits up into Benzoic Acid and Aconine; from *Aconitum ferox* (Nepaul Aconite, *Bikh* or *Bish* of Northern India), Pseud-aconitine, which is physiologically similar, but splits up into Veratric Acid and Pseud-aconine; from *Aconitum Japonicum*, Jap-aconitine which decomposes into Benzoic Acid and Jap-aconine. *A. heterophyllum* (Atees) and *A. palmatum*, Indian plants, yield no Aconitine, being tonic and antiperiodic in action. *Py. Ind.* i. 15.

English Aconitine (Morson's), which is generally preferred, is supposed to be identical with Pseud-aconitine.

French Aconitine (Duquesnel's) occurs in crystals and is prepared from *A. Napellus*. It is the most potent form, being about ten times as powerful as the 'German amorphous,' and care should be taken to distinguish between them.

German Aconitine (Amorphous) is obtained from *A. Napellus*, but by a different process from the preceding, and is not so generally preferred. It is believed that the difference in strength is due to admixture with other and less active alkaloids.

English Aconitine is freely soluble in ether, spirit, and dilute acids, but requires 4000 parts of water to form a solution. When rubbed on the skin it produces a tingling sensation followed by numbness, and relieves acute nervous pain. Care should be taken in its application to avoid abraded skin or mucous surfaces.

Dose— $\frac{1}{240}$ to $\frac{1}{80}$ grain. May be increased to $\frac{1}{16}$ grain.

Injectio Aconitinae Hypodermica.—One grain in $\frac{1}{2}$ ounce. *Dose*—1 to 4 minims.

Oleatum Aconitinae.—2 per cent. Very useful as a paint for neuralgia, being readily absorbed.

Unguentum Aconitinae, B.P.—8 grains to 1 ounce. For neuralgia, etc.

The following formula has been recommended in obstinate facial neuralgia which resists the action of Aconitine or of Quinine alone:—
R. Quinin. Hydrobrom. 10 centigrammes, Aconitin. (Crystal) 0.5 milligramme. ft. pil. One every 4 or 5 hours.

The preparations of Aconitine are very valuable in neuralgia, sciatica, and acute rheumatism. A good form of application is

Anodyne Amyl Colloid, which contains Aconitine, along with Veratrine and Hydride of Amyl, dissolved in Collodion, the latter keeping the anodynes in contact with the skin. The rapid evaporation of the Amyl Hydride is often sufficient in itself, but should the pain continue, a piece of moist spongio-piline applied over the collodion film will bring the alkaloids into increased activity.

ADANSONIA DIGITATA.

Baobab; Monkey Bread Tree.—A large African tree, cultivated in India. The pulp of the fruit is astringent and demulcent, and is used by the natives as a remedy for diarrhoea and dysentery. The ash of the pericarp is used in Africa for the manufacture of soap.—*Pg. Ind.* i. 220. The bark is said to contain a glucoside *Adanserin*, having properties antagonistic to Strophanthus, but this requires confirmation.

ADEPS LANAÆ. See page 177.

ADEPSINE. See page 208.¹

ADONIS.

False Hellebore.—The leaves and stalks of *Adonis vernalis*, Linn. (Ranunculaceæ) of Southern Europe. Adonis owes its activity to a glucoside *Adonidin*, the action of which is similar to Digitalin, but not cumulative. The plant acts as a cardiac tonic and is given in heart disease and dropsy.

Dose—3 to 6 grains in powder.

Extractum Adonidis Liquidum.—*Dose*—1 to 2 minims, cautiously increased.

Tinctura Adonidis.—*Dose*—10 to 30 minims.

Adonidin.—A glucoside, the active principle of Adonis. Cardiac tonic and diuretic. It acts chiefly on the heart, raising arterial tension, having a sedative action on the heart similar to Belladonna.—*L. Nov. 24, '88.*

Dose— $\frac{1}{10}$ to $\frac{1}{2}$ grain. Has been successfully given in doses of $\frac{1}{3}$ grain (1 mg.) in Chloroform Water, 4 times a day.—*L. Mar. 23, '89.*

ÆTHER, B.P.

Ether; Sulphuric Ether; Ethyl Ether; Di-ethyl Oxide. ($C_2H_5)_2O$.—A very volatile and inflammable, colourless liquid, prepared from Alcohol by the abstraction of a molecule of water. Stimulant, antispasmodic, and narcotic, and is also largely used as an anæsthetic, both local and general. It has less depressant action on the heart than Chloroform, but it is less pleasant to use, and great care is required in using it owing to its inflammable nature. It is not so suitable as Chloroform—for children and old people; where there is any lung affection; where lamps or cauteries are to be used; in abdominal operations, and the reduction of dislocations; in other cases Ether is preferable.—*Ring.*

Ordinary Ether contains 92 per cent. of pure Ether. Sp. gr. 0.735. It is sometimes used as an anæsthetic.

Aether Purus, B.P., Absolute Ether.—Free from alcohol and water. Being pure it is better suited for general and local anaesthesia. Sp. gr. 0·720.

Absolute Ether (Methylated).—Sp. gr. 0·717 to 0·719. Contains a small proportion of Methylic Ether, being prepared from Methylated Spirit. It is specially adapted for local anaesthesia, but is too volatile for use as a general anaesthetic.—*M.*

Rectified Ether (from Methylated Spirit).—This is Methylated Ether purified and redistilled. Quite as suitable as, and considered by some safer than that prepared from pure spirit. Sp. gr. 0·720.

Methylated Ether.—Sp. gr. 0·730. Suitable only for common purposes, as ice machines, etc.

Medicinal Preparations of Ether.

A. C. E.—See page 80.

Ethereal Tinctures.—See page 69.

Spiritus Aetheris, B.P.—1 in 3. *Dose*—30 to 90 minims.

Spiritus Aetheris Compositus, B.P.—Hoffmann's Anodyne.* *Dose*—30 to 90 minims.

Oleum Morrhuae cum Aethere.—1 in 12 to 1 in 6. The Ether stimulates the pancreas and assists digestion of the Oil. A very useful remedy in phthisis. *Dose*—2 drachms.

Compound Anaesthetic Ether.—Contains Hydride of Amyl, 1 in 4. For local anaesthesia.

Hydramyl Ether.—A modification of the above, containing Hydride of Amyl, 1 in 2.

Spiritus Aetheris Nitrosi, B.P. Sweet Spirits of Nitre.—A complex preparation, which owes its properties chiefly to Nitrite of Ethyl and Paraldehyde. *Dose*—½ to 2 drachms.

* The simple Spirit of Ether (Spiritus Aetheris, B.P.) is known as Hoffmann's Anodyne in Continental practice.

Aethyl Nitrits. Nitrite of Ethyl.—A liquid boiling at 63·5° F. Used only for inhalation.

Liquor Aethyl Nitritis.—3 per cent. More definite in composition than Sp. Aeth. Nit.

Dose—10 to 60 minims. Should not be diluted with water until administered.—*Ph. J.* Dec. 22, '88.

AETHYL BROMIDUM.*

Bromide of Ethyr; Bromethyl; Hydrobromic Ether; Aether Bromatus; C₂H₅Br.—A volatile, colourless liquid, prepared from Alcohol and Bromide of Potassium. On keeping it is apt to decompose, liberating Bromine; this may be prevented by the addition of alcohol, and exclusion of air and light.—*Sq.* Sp. gr. 1·420. Soluble 1 in 70 of water, freely in alcohol and ether. Has been used as a local and general anaesthetic, chiefly in dental operations and minor surgery. Causes anesthesia in 2 or 3 minutes. It is administered in the same manner as Ether, a mixture of Aethyl Bromide 1, Chloroform 3 and Alcohol 4, being sometimes used. It is also inhaled to relieve migraine.

Has been recently condemned as unsafe, especially in dental practice, 3 deaths having resulted from its administration.—*L.* Sept. 20, '90. Difficult to obtain pure, being usually contaminated with Bromine, Bromoform, etc., hence its danger.—*B.M.J.* Oct. 11, '90.

Bromide of Ethyl Capsules.—5 minims each. For inhalation.

Liquor Aethyl Bromidi.—1 in 200. For angina pectoris. **Dose**—½ to 2 ounces.

AETHYL IODIDUM.

Iodide of Ethyl; Hydriodic Ether; C₂H₅I.—A colourless liquid, with a penetrating ethereal odour, not very inflammable. Sp. gr. 1·94. Becomes brown on exposure owing to liberation of Iodine. Very slightly soluble in water, freely in alcohol and ether.

* This must be distinguished from *Ethylene* Bromide (C₂H₄Br₂) which is now given in doses of 5 to 15 drops, in milk, 3 times a day, for epilepsy, being considered better than inorganic Bromides.—*Ph. J.* May 30, '91.

Relieves the dyspnoea of bronchitic asthma and oedematous laryngitis. As an inhalation 5 minims 3 or 4 times a day.

Capsules of Iodide of Ethyl.—5 minims each. For inhalation.

Ethyl Iodide does not weaken the digestive organs, but has a tonic effect. It is also used in secondary and tertiary syphilis as an adjunct to Iodide of Potassium.—*Squibb.* Also as a vesicant and application to the uterus.—*L.* '85, ii. 755. It contains 80 per cent. of Iodine, and forms a rapid means of saturating the system with this element.—*M.* p. 45.

AGARICUS ALBUS.—

White or Purging Agaric ; Agaric of Larch.—Also known as *Boletus Laricis* ; *Fungus Laricis* ; *Polyporus officinalis* ; Touchwood. A fungus which grows on the Larch. In commerce it is deprived of the outer rind, and thus occurs in white, irregular pieces, spongy, light and friable, with a faint odour and sweetish, afterwards bitter, taste. Must not be confounded with Fly Agaric, *Amanita Muscaria*, from which Muscarine is obtained (see p. 193). Agaric is purgative in large, astringent in small, doses. It is given to check night-sweats, to diminish bronchial secretion, to dry up the milk, and in haemoptysis.

Dose—5 to 30 grains in powder.

Extractum Agarici.—Alcoholic. **Dose**—3 to 6 grains in pill.

Extractum Agarici Liquidum.—Not miscible with water. **Dose**—3 to 20 minims.

Tinctura Agarici.—1 in 10. **Dose**—20 to 60 minims.

Agaricin.—A non-nitrogenous crystalline powder obtained from Agaric by treatment with alcohol. Taste similar to Agaric ; insoluble in ether, slightly soluble in water. Given for night-sweats in pill along with Dover's Powder,

which checks its laxative action. Acts in about 6 hours. *Dose*— $\frac{1}{4}$ to $\frac{1}{2}$ grain: should not be given hypodermically.

Agaric Acid; Laricic Acid.—The true active principle of Agaric. It constitutes 97 per cent. of Agaricin, the remainder being *Agaricol*, which is inactive. Agaric Acid occurs in minute white crystals, and until quite recently was held to be identical with Agaricin.—*Ph. J.* Aug. 31, '89; *Watt's Dict. Chem.* i. 87. *Dose*— $\frac{1}{4}$ to $\frac{1}{2}$ grain.

AGNINE.—See page 177.

AJOWAN (PTYCHOTIS), P.I.

Bishop's Weed; Ajwain; Omum.—The fruit of *Carum (Ptychotis) Ajowan* (Umbelliferae), cultivated in India. Small, possessing a strong odour of Thymol, and one of the official (*B. P.*) sources of that substance. Stimulant, carminative, antispasmodic, and antiseptic. Largely used in India as a remedy for flatulence, colic, atonic dyspepsia, diarrhoea, and cholera.

Oleum Ptychotis, Oil of Ajwain or Omum.—Distilled from the fruit. *Dose*—1 to 3 drops on sugar or in emulsion.

Aqua Ptychotis, Ajwain or Omum Water.—Distilled from the fruit. A valuable carminative, specially useful for disguising the taste, and correcting the nauseating and griping properties of drugs like Castor Oil. *Dose*—One to two ounces.

Extractum Ptychotis Liquidum.—Not miscible with water. *Dose*—10 to 30 minimus.

The crystalline substance sold in the bazaars as *Ajwain-ka-phul*, is a stearoptene, prepared from the fruits, and similar to Thymol.

ALDEHYDUM.

Aldehyde; Acetaldehyde. CH₃CHO. — An oxidation product of Alcohol, intermediate between it and Acetic Acid. A colourless liquid with a characteristic odour, miscible with water, alcohol, and ether. It readily oxidises into Acetic Acid. It is only used diluted.

Aldehydum Dilutum, T. H.—15 per cent. A colourless, neutral liquid, with a suffocating odour.

Vapor Aldehydi, T. H.—80 minims to 1 ounce. A teaspoonful of this in a pint of water at 140° is used for catarrhal congestions and ozaena.

Paraldehyde.—See page 209.

Metaldehyde.—See page 210.

ALETRIS.

The rhizome and rootlets of *Aletris farinosa*, Linn., South America, known as True Unicorn, Colic root, etc. Said to be valuable in amenorrhœa, dysmenorrhœa, prolapsus uteri, sterility, etc., and to prevent miscarriage. Highly recommended as a uterine tonic, being especially indicated in cases where abortion is feared, in which cases it should be continuously administered during entire gestation. Also said to be tonic, diuretic, and vermifuge.

Dose—10 grains, in powder.

Extractum Aletris (Solid).—**Dose**—2 to 5 grains.

Extractum Aletris Liquidum.—**Dose**—10 to 30 minims.

Tinctura Aletris.—Strength—1 in 8. **Dose**—1 to 2 drachms.

Decoctum Aletris.—Strength—1 in 20. **Dose**—½ ounce.

Aletris Cordial.—An imported preparation. **Dose**—A teaspoonful 3 or 4 times a day.

Aletrin.—An American concentrated preparation. *Dose*— $\frac{1}{2}$ to 4 grains.

ALLYLTRIBROMIDUM.

Tri-bromhydrin; Tri-bromo-propane.
 $C_3H_5Br_3$.—A colourless liquid, very soluble in ether, boiling at 220° C. A powerful nervous sedative, retarding or suspending the convulsions produced by Picrotoxin and Strychnine. Has been recommended for hysteria, asthma, whooping cough, angina pectoris, infantile convulsions, gastralgia, and neuralgia.

Dose—Hypodermically, 2 to 3 minims dissolved in 15 to 30 minims of Ether. This injection causes pain, probably due to the ether.

Internally, 5 to 10 minims in capsules, 3 or 4 times in 24 hours.

ALSTONIA, P. I.

Dita Bark.—The bark of *Alstonia scholaris* (Apocynaceæ), a common tree throughout India. In irregular fragments of a spongy texture, and purely bitter taste without aroma. Contains an alkaloid *Ditaine* to the extent of 0·05 per cent., which is said to rival Quinine, and has been used for this purpose. The milky juice of the tree furnishes a substance resembling gutta-percha. The bark is an astringent tonic, anthelmintic and antiperiodic. It is very valuable in chronic diarrhoea and dysentery, and as a tonic in convalescence from exhausting diseases.

Dose—3 to 5 grains, in powder or pill; combined, in bowel affections, with small doses of Ipecacuanha and Extract of Gentian.

Tinctura Alstoniae, P.I.—1 in 2. *Dose*—1 to 2 drachms.

Infusum Alstoniae, P.I.—1 in 20. *Dose*—1 to 2 ounces.

Extractum Alstoniae Liquidum.—Miscible with water. *Dose*—3 to 8 minims.

ALSTONIA CONSTRICTA.

Queensland Fever Bark.—The bark of *Alstonia constricta* (Apocynaceæ), of Australia. Contains an alkaloid *Alstonine* or *Chlorogenine*. The bark and its preparations have been used with much success as a substitute for Cinchona in fever and ague, especially some forms of remittent fever which do not yield to the latter. It is generally considered inferior to Dita Bark.

Dose—5 grains.

Tinctura Alstoniae Constrictæ.—1 in 10. *Dose*— $\frac{1}{2}$ to 2 drachms.

Extractum Alstoniae Constrictæ Liquidum.—Precipitated by water. *Dose*—2 to 5 minims.

ALUMINIUM SALTS.

Alumen, B. P.—The double Sulphate of Potash (or Ammonia) and Aluminum.—*Dose*—2 to 20 grains; as an emetic, 1 drachm or more.

Alumen Exsiccatum, B. P.—Dried Potassium Alum. 100 parts of Alum yield 54 of dried Alum. Used externally as an escharotic.

Glycerinum Aluminis.—See page 132.

Liquor Aluminii Acetici, P. G.—A colourless liquid, containing 7 $\frac{1}{2}$ to 8 per cent. of Subacetate of Aluminium. A powerful antiseptic and astringent, used as a dressing. Best employed after diluting with twice its bulk of water.

Aluminii Aceto-Tartras.—In crystals soluble in their own weight of water. Antiseptic and astringent. 30 to 60 grains to 1 pint of water forms a useful gargle or douche.

Liquor Aluminii Chloridi.—A pale yellow liquid, astringent and antiseptic. 3 to 15 minims to 1 ounce of water forms a spray, gargle or paint. The preparation known as

Chloralum is similar to this in composition but is less pure and much weaker.

Aluminii Nitræ.—Used in the form of solution, 4 to 6 grains in 1 oz. of water, for pruritus vulvæ.

Aluminium Oleate.—See page 199.

Aluminium Sulphite; $\text{Al}_2(\text{SO}_4)_3$.—A white powder insoluble in water. An unirritating and non-poisonous antiseptic, said to be equal in effect to the Acetate, and somewhat less than half as powerful as Hydrarg. Perchlor. 30 grains may be safely administered internally. Further experience of its effects is required.—*Ph. Rec.* Nov. 1, '88; *Ph. J.* Dec. 1, '88.

Aluminium Bisulphite; $\text{Al}_2\text{H}_n(\text{SO}_4)_n$.—Similar to the Sulphite but soluble in water, and may be used where a liquid antiseptic is required.—*Ph. Rec.* Nov. 1, '88.

AMMONIUM.

Until quite recently 'Volcanic' Ammonia, obtained as a by-product in the manufacture of borax, was considered the only reliable form from which to prepare Ammonium salts for medicinal purposes, the Ammonia obtained from gas liquor, the chief commercial source, being apt to contain many impurities. The present scarcity of Volcanic Ammonia, however, has led to the better purification of that obtained from coal and shale, with the result that this Ammonia may now be had sufficiently pure for medicinal use.

Ammonii Benzoas, B.P. $\text{NH}_3\text{C}_7\text{H}_5\text{O}_2$. Occurs in colourless laminar crystals, soluble 1 in 5 of cold water, 1 in 20 of rectified spirit. Action diuretic, useful for dropsy and gout. It acts more quickly than Benzoic Acid. Has also been recommended in 15 grain doses for scarlet fever. It stimulates the liver, but is inferior in this respect to Benzoate of Sodium. *Dose*—10 to 20 grains in water.

Ammonii Bicarbonas.—In small white crystals, soluble in water. Said to be more palatable than the official Carbonate. *Dose*—3 to 10 grains.

Ammonii Bromidum, B. P.—Causes less depression than the Potassium salt. Incompatible with acids and Sp. Æth. Nit. *Dose*—2 to 20 grains.

Lozenges, of 2 grains each, are used for whooping cough.

Rubidium-Ammonium Bromide.—In white granular crystals. Said to be more powerful than Potassium Bromide. It having been noticed that the activity of the bromides is proportional to their atomic weight, this compound has been selected as having a high atomic weight. It is, however, rather an expensive remedy.—*Ph. J.* July 27, '89; *B.M.J.* '90, i. 43. *Dose*—6 grammes (90 grains) per diem.

Ammonii Carbonas, B.P., Carbonate or Sesquicarbonate of Ammonia. A mixture of Acid Carbonate and Carbonate of Ammonium. *Dose*—3 to 10 grains.

Ammonii Chloridum, B. P. (*Sal ammoniac*) NH₄ Cl.—In tough fibrous masses, or white granular crystals, the latter being the purer form. Soluble 1 in 3 of water; 1 in 55 rectified spirit. Acts as an expectorant in chronic bronchitis, for which it should be given in 20 grain doses every 3 or 4 hours, mixed preferably with Liquorice.—*Rung.* Similar doses may be given either alone or combined with Tinet. Opii and Magnes. Sulph., for neuralgia, for which it is said to be a certain cure.

Chloride of Ammonium is largely used in India in hepatic congestion and abscess.

Dose—5 to 20 grains.

Ammonium Chloride Lozenges (2 and 3 grs.) and **Compressed Tablets** (3 and 5 grs.) are convenient means of administering the drug.

Lotio Ammonii Chloridi.—1 in 12. As a dressing for bruises.

Chloride of Ammonium Inhaler.—An apparatus so constructed as to mix the fumes of Ammonia and Hydrochloric Acid in such a manner that a *perfectly neutral* vapour of Chloride of Ammonium may be formed, which, when brought into immediate contact with the air passages of the throat, affords quick relief in cases of bronchial and catarrhal affections.

Ammonium Chloride is incompatible with alkalies, alkaline earths and their carbonates; also lead and silver salts.

Ammonii Fluoridum — See page 11.

Ammonii Iodidum U. S. P.—A white, deliquescent, granular salt, readily becoming yellow on exposure to air and light, owing to liberation of Iodine. Odourless when white. (A piece of Carbonate of Ammonia placed in the bottle will restore the salt if coloured) Soluble 1 in 1 of water: 1 in 9 of rectified spirit.

Action similar to Iodide of Potassium. It is more easily borne, causing less depression, and is preferred in syphilis and rheumatism.

Dose—2 to 5 grains or more, 3 times a day, up to 20 grains may be given.

Ammonii Niras, B.P.—For preparing Nitrous Oxide gas.

Ammonii Phosphas, B.P.—Valuable in uric acid calculus, and as a hepatic stimulant. *Dose*—5 to 20 grains.

Ammonii Picras.—See page 15.

Ammonii Sulpho-ichthyolas.—See page 157.

Linimentum Ammoniæ, B. P.—1 in 4.

Linimentum Opii Ammoniatum, B.P.C.—Similar to ‘Bow’s Liniment.’

Liquor Ammoniæ, B.P.—Sp. gr. 0·959.

Dose—10 to 35 minims, given for snake-bite.

Liquor Ammoniæ Fortior, B.P.—Sp. gr. 0·891. Three times the strength of the

preceding. Also used for snake-bite. *Dose*—3 to 6 minims.

Liquor Ammoniæ Fortissimus.—Sp. gr. 0·880.

Liquor Ammonii Acetatis Fortior, B.P.—*Dose*—25 to 75 minims.

Liquor Ammonii Acetatis, B.P.—Contains 1 of the last to 4 of water. *Dose*—2 to 6 drachms.

Liquor Ammonii Citratis Fortior, B.P.—*Dose*—30 to 75 minims.

Liquor Ammonii Citratis, B.P.—1 to 3. *Dose*—2 to 6 drachms.

Spiritus Ammoniæ Aromaticus, B.P.—Sp. gr. 0·896. *Dose*—15 to 60 minims.

Spiritus Ammoniæ Fœtidus, B.P.—*Dose*—15 to 60 minims.

AMYL HYDRIDE.

Pentylene; **Hydramyl**; **Rhigolene** (impure variety). $C_5H_{10}H$.—One of the lightest liquids obtained in the fractional distillation of Petroleum Spirit. Sp. gr. 0·628—0·636, boiling point about 86° F. A very inflammable liquid; produces general anaesthesia when inhaled, also when applied locally acts as an anaesthetic by freezing the part. It enters into the composition of *Anodyne Amyl Colloid* (page 20), and *Anaesthetic Ethers* (page 22).

AMYL NITRIS, B.P.

A yellowish ethereal liquid with a peculiar odour, produced by the action of Nitrous or Nitric Acid upon Amylic Alcohol. It contains 40 to 50 per cent. of Amyl Nitrite, $C_5H_{11}NO_2$, 10 per cent. Iso-butyl Nitrite (see next page), the remainder being Propyl Nitrite and several non-active constituents.—*Ph. J.*, Dec. 22, '88. It varies in composition according to the process

employed in its manufacture. Insoluble in water, freely soluble in spirit, chloroform, etc.

Nitrite of Amyl dilates the vessels and lowers the blood-pressure.—*Ph. J.* Dec. 22, '88. It is given by inhalation or by the mouth for angina pectoris, sea-sickness, ague, etc.; also as an antidote to Cocaine (*B. M. J.* '88, i. 757), Chloroform and Strychnine. 8 minims, inhaled, acts beneficially in *status epilepticus*.—*B. M. J.* Aug. 10, '89.

Dose—By inhalation. 2 to 5 minims; by the mouth, $\frac{1}{2}$ to 1 minim.

Amyl Nitrite Capsules.—1, 2, 3 and 5 minims, enclosed in a glass capsule covered with cotton wool, for convenience in inhaling.

Mistura Amyl Nitritis.—4 minims in 1 ounce. For sea-sickness. **Dose**—1 to 2 drachms.

Tertiary Amyl Nitrite.—Prepared from Tertiary Amyl Alcohol, or Amylene Hydrate (see below). A mobile, amber-coloured liquid with an odour compared to camphor and terpin, soluble in alcohol, slightly soluble in glycerine, and insoluble in water. Has an action similar to the primary Nitrite, but more marked and permanent, and as it does not cause flushing of the face, and is said to be free from danger, it can be inhaled in quantities of 80 to 100 drops daily.

Iso-butyl Nitrite, $C_4H_9NO_2$.—This has been proved to be more active than *B. P.* Amyl Nitrite, of which it constitutes about 10 per cent., and being at the same time more definite in composition than the latter, has been recommended as more reliable.

Dose—3 to 5 minims by inhalation.—*Ph. J.* Dec. 22, '88. This substance is difficult to preserve in a tropical climate.

AMYLENI HYDRAS.

Tertiary Amyl Alcohol; **Ethyl-Dimethyl-Carbinol**; $C_3H_8(CH_3)_2COH$.—A colourless oily liquid, soluble in 8 to 12 parts of

water, freely in alcohol. Sp. gr. 0·812. It acts as a hypnotic, occupying a position intermediate between Chloral and Paraldehyd, being safer than the former, and more free from smell than the latter. It does not disturb the stomach, but occasionally causes headache, giddiness, and symptoms similar to alcoholism. It is antagonistic to Strychnine. On the whole, it has been found to be a most satisfactory hypnotic. Whether it fails by repeated doses or leads to a craving, has not yet been established. Contraindicated in febrile conditions.—*K. Jan. '90.*

Has been tried in epilepsy, with fair success, 5 to 8 grammes *per diem*. Caused excitement after the effects had worn off.—*B.M.J. (Supplement), Nov. 22, '90.*

Dose—30 to 80 minims, with Ext. Glycyrhizæ or in **Capsules**. Amylene Hydrate is liable to contamination with Amylic Alcohol. *Test*.—Treatment with Potassium Bichromate and Sulphuric Acid should *not* develop any odour of Valerianic Acid, the oxidation product of Amylic Alcohol; Amylene Hydrate oxidising into Acetone and Acetic Acid.

ANACARDIUM.

Cashew Nut; Kaju.—The seeds of *Anacardium occidentale*, Linn., (Anacardiaceæ), an American plant, cultivated in India. They are imported in large quantities into Bombay from Goa. A spirit distilled from the fermented juice expressed from the thalamus is said to possess diuretic and sudorific properties, and to be a valuable application in rheumatism.—*Py. Ind.* t. 386. A tarry liquid obtained from the pericarp by heat contains 90 per cent. *Anacardic Acid* and 10 per cent. *Cardol*, and is used as a vesicant and counter-irritant, also as an application for leprosy, ringworm, corns, and obstinate ulcers. Being insoluble in the fluids of the alimentary canal, 3 or 4 drops may be swallowed without marked effect.

Unguentum Anacardii.—1 part of the Tar to 8 of Lard or Vaseline. Used as a blistering ointment.

Tinctura Anacardii.—1 part of the perioarps to 10 of Rectified Spirit. *Dose*—2 to 10 minims as a vermifuge.

The fruit of *Semecarpus Anacardium*, Linn., the Marking-nut tree of India, contains an oil which is said to possess similar properties.

ANILINE.

Monophenylamine ; Amido-Benzene ;
 $C_6H_5NH_2$.—A colourless, oily liquid, with a characteristic odour. Sp. gr. 1.028. Obtained from coal-tar. Soluble in alcohol, ether and oils. It gradually assumes a pale straw colour when exposed.

Aniline is used in the *Aniline treatment of phthisis*, which consists essentially in the inhalation of one part Aniline and 7 of Oil of Eucalyptus or some similar diluent. The Aniline being a bactericide is supposed to destroy the tubercle bacilli in the blood, but the treatment has been reported on very unfavourably, toxic symptoms having been developed.

Aniline Camphorate ; $(C_6H_5NH_2)_2C_{10}H_{16}O$.—In small white or pinkish prisms, soluble in water, glycerine, alcohol, etc., and having a pungent acrid taste. It has antispasmodic properties, and a solution in glycerine and water has been recommended for hypodermic use in phthisis.—*Ph. J.* June 25, '87. *Dose*—1 to 3 grains.

Aniline Colours—

Methylene Blue.—Has been recommended as an anodyne, given hypodermically and by the mouth to the extent of 1 gramme per diem.—*Ph. J.* June 28, '90.

Pyoktanin, Methyl-violet.—Has been found to possess antiseptic properties in a marked degree. A solution 1 in 1,000 is recommended for eye diseases, ulcers, etc.—*M. R.* Oct. '90; *L.*

Nov. 8, '90. The fact that bacteria readily absorb aniline dyes and perish thereby led to the suggestion. Pyoktanin is sent out in two varieties, **Blue** for surgical, and **Yellow*** for ophthalmic purposes. Both are made into Dusting Powder (2 per cent.), Ointment (2 per cent.), and Gauze (1 in 1,000).—C. & D. Nov. 1, '90. The stains may be removed by alcohol, etc., from the skin; those in the eye give no trouble.—L. Nov. 8, '90.

Injection of a 1 in 1000 and 1 in 500 solution of Blue Pykotanin, twice daily, cured 4 cases of obstinate chronic cystitis in 10 to 14 days.—*B.M.J. (Supplement)*, Nov. 22, '90. Since then a number of more or less successful cases have been reported.

Fuchsine; Rosaniline Mono-hydrochloride; Magenta; Roseine.—A mixture of the hydrochlorides of Para-rosaniline and Rosaniline. In iridescent beetle-coloured crystals, soluble in water, forming an intense crimson solution. It is much used as a stain for bacilli, and in microscopic work generally. Very useful in renal albuminuria, also in cancer. For medicinal use it should be perfectly pure, commercial samples usually containing a variable quantity of arsenic.

It colours the urine and frequently the stools. *Dose*—½ to 4 grains in pill.

ANTHRAROBIN.

Desoxyalizarin.—A reduction product of Alizarin. A light brown powder, insoluble in water, but soluble in alcohol and alkaline solutions. It has been recommended as a substitute for Chrysarobine, on the assumption that the medicinal value of the latter depends on its avidity for oxygen, whereby it becomes converted into Chrysophanic Acid (see page 44). Anthrarobin oxidises readily when exposed to the air, and is recommended to be applied in psoriasis, eczema, erysipelas, and other cutaneous affections. It is used as a 10 p. c. ointment or tincture, applied after washing the parts with potash soap.

* A substance similar to Yellow Pyoktanin is sold as *Apyonin*.

ANTIFEBRIN.

Acetanilidum, B. P. (Ad.) ; Phenylacetamide. $C_6H_5NH.C_2H_4O$.—A white crystalline powder, prepared from Aniline and Glacial Acetic Acid. Produces a burning sensation on the tongue. Very slightly soluble in water, more soluble in hot water, freely soluble in spirit and alcoholic liquids, as wine. Its action is antipyretic, sedative, and antiseptic, and it is given for fever, rheumatism, small-pox, typhoid, and epilepsy. For febrile symptoms, 4 to 16 grains should be given as a single dose; action commences within one hour, reaches its maximum in 4 hours, and ceases in 3 to 10 hours, according to dose.

An ointment, 20 grains to 1 ounce, is recommended for obstinate irritable ulcers,—soothing pain and subduing inflammation; with Ung. Hydrarg. it is useful in psoriasis, and is a valuable adjunct to other remedies in the treatment of skin diseases.—*L. Apr. 6, '89.* 5 grains every half hour, or 10 grains every hour, for 2 or 3 doses, very useful in migraine.—*N. J. Sept. '90.* Small, frequently repeated doses recommended for high temperature in typhoid and phthisis: $\frac{1}{2}$ to $1\frac{1}{2}$ grains hourly, and never more than 20 grains during 24 hours—3 grains considered a dangerous dose in such cases.—*B.M.J. (Supplement), Nov. 22, '90.* Exhibits many disagreeable secondary effects.—*H. July, '90.* Several cases of poisoning have occurred from its use.—*Ph. J. June 28, '90.*

Dose—4 to 16 grains. 5 grains may be dissolved in 20 to 40 minimis Sp. AEth. Nit. and 20 minimis Sp. Ammon. Arom.—*M. R. Aug. '90.*

Monobromacetanilid, $C_6H_5NBr.C_2H_4O$.—A Bromine derivative of Acetanilid, occurring in white silky needles. Action similar to Antifebrin, but the dose is smaller. **Dose**—1 to 8 grains; for neuralgia, 1 to 2 grains every 3 hours.

Antikamnia is the name given to a nostrum consisting of Antifebrin mixed with Sodium Salts.

ANTIPYRIN.

Phenazonum, B.P. (Ad.); **Analgesine**; **Phenyldimethylpyrazolon** $C_11H_{12}N_2O$.—A 'crystalline substance obtained from phenyl-hydrazine,' occurring in white shining scales, melting at 233° F (111.6° C), and freely soluble in water.

A powerful antipyretic, analgesic, and haemostatic.

Dose—4 to 30 grains, in tablets, or solution.

Antipyrin Tablets (Compressed)—5 grains each. *Dose*—1 to 4 or more.

In *febrile cases* it reduces the temperature rapidly in doses of 15 to 30 grains, given hourly for 3 hours. It usually causes diaphoresis, and occasionally nausea and vomiting, sometimes producing also a rash similar to scarlatina or measles. For children $1\frac{1}{2}$ grain for each year of age is a suitable dose.

For *sea-sickness*, 15 grains 3 times a day before embarking, and the first three days of the voyage. Best taken in the form of

Antipyrin Elixir.—*Dose*—A tablespoonful (15 grains).

In *bilious headache*, 8 grain doses every hour for 3 or 4 hours, the patient being kept quiet. The following are good forms:—

Granular Effervescent Antipyrin.—5 grains in one drachm. *Dose*—One teaspoonful or more.

Aerated Antipyrin Water (in Syphons).—5 grains in each wineglassful. *Dose*—One to two wineglassfuls every 3 hours.

In *acute rheumatism*, 60 to 90 grains a day removes pain and swelling in from 2 to 4 days.

Sunstroke has been successfully treated by doses of 20 to 30 grains.—*B. M. J.*, April 30, '87.

The *pains of pregnancy* may be removed or prevented, without retarding delivery, by the injection *per anas* of 30 grains in 5 or 6 ounces of water.

Chorea has been quickly cured by 15-grain doses 3 times a day.—*T. G.* April, '88.

Antipyrin is also said to suppress the milk secretion.—*T. G.* Sept. '88.

Cases are also recorded in which Antipyrin has checked *hemoptysis*.

Antipyrin acts in *diabetes* by depressing the nervous system and thereby lessening the chemical and nutritive activity of the body.—*B. M. J.* June 29, '89. In one case the sugar fell in one week from 35 to 3·6 grammes on 3 grammes Antipyrin per diem.—*L. Apr. 20, '89.*

In combination with Soda Bicarb. 1 gramme Antipyrin per diem will dissolve *calculus*.—*Pr. Apr. '89.*

Hypodermically. Antipyrin is recommended for lumbago, sciatica, angina pectoris, biliary and renal colic, and dysmenorrhœa.

Injectio Antipyrin Hypodermica.—1 grain in 2 minims. *Dose*—8 to 30 minims or more.

Injectio Antipyrin et Cocainæ Hypodermica.—The above containing 1 grain Cocaine Hydrochlorate in 150 minims. *Dose*—The same. Less painful in use than the simple injection.

As a *local anaesthetic*, Antipyrin is said to rival Morphine, without the bad effects of the latter. The hypodermic injection is recommended for this purpose.

Antipyrin is also prescribed for *influenza*. 30 grains at the commencement of a paroxysm have relieved *asthma*.—*Ph. J. Mar. 29, '90.*

Has also been recommended for *ulcerated piles* in the form of suppositories.

Antipyrin Salicylate or Salipyrin.—Contains molecular proportions of Antipyrin and Salicylic Acid in combination. In colourless crystalline scales, nearly insoluble in water and ether, freely soluble in alcohol. Formula $C_{11}H_{12}N_2O \cdot C_7H_6O_3$. Its therapeutic properties are at present under examination, and are said to be favourable, but have not yet been fully published.—*Ph. J. June 28, '90; Ph. Rec. Sept. 1, '90.* Easily decomposed by acids or

alkalies. May be given in all cases where the combined action of the two drugs is desired, avoiding the liquefaction caused by mixing the powders (see below). *Dose*—15 to 30 grains; double the dose of Antipyrin being required to reduce the temperature. 90 grains in 24 hours cause no unpleasant symptoms.—*B. M. J.* Oct. 11, '90.

The use of Antipyrin is contra-indicated:

1. During the menstrual period and in dysmenorrhœa.—*Ed. M. J.* May '89.
2. In cardiac weakness and extreme exhaustion.—*Th. G.* '89, p. 457.
3. After exhaustive hemorrhages.—*Pr.*
4. In the later stages of tuberculosis.—*Pr.*
5. In kidney disease.—*B. M. J.* '88, i. 1185.

Antidotes.—Atropine acts promptly; an emetic and purgative are also good, but more gradual.—*Ph. J.* Feb. 2, '89.

Incompatibles.—Sp. *Aetheris Nitrosi* forms a green inert compound (*Iso-nitroso-Antipyrin*). *Cinchona* preparations form a precipitate soluble in weak acids. When prescribed with *Sodium Salicylate* it should be ordered in solution, as these drugs when mixed form a liquid similar to *Chloral* and *Camphor*, although in a dry atmosphere and with care this may be avoided to some extent.

Liquid compounds are also formed by mixing Antipyrin with β -Naphthol and Butyl-Chloral Hydrate. A solution of Antipyrin when mixed with a solution of Chloral Hydrate at once present a milky appearance, depositing an oleaginous fluid which smells of coriander, and differs from both ingredients. Several compounds appear to be formed by the union of these two substances, some of which seem to be inert, others to have the combined properties of their constituents (see **Hypnal**).

In prescribing Antipyrin all formulæ should be as simple as possible, as its physiological action is so readily interfered with. For full

list of Antipyrin incompatibles, see *Ph. J.* April 19, '90.

Antipyrin increases the solubility of Quinine and Caffeine.—*Ph. J.* Mar. 1, '90.

Antipyrin may be detected in the urine by adding a dilute solution of Iodine drop by drop; a precipitate forms which at first disappears on shaking and then reappears permanently.

Antipyrin being freely soluble in water may be administered in that liquid, the taste being disguised by means of peppermint. It may also be administered in cachets or compressed tablets. The taste may also be covered by taking the dose in a cup of coffee. —*B. M. R.* Oct. 27, '88.

For comparison of Antipyrin with other antipyretics, see page 217.

ANTITHERMIN.

Phenylhydrazin-Levulinic Acid.—A coal-tar derivative, allied to Antipyrin. It is a compound of Phenylhydrazin with Acetopropionic Acid (Levulinic Acid), and is prepared by direct combination of these two substances. In colourless crystals insoluble in water, and with difficulty in alcohol. Being apt to cause stomach pains, it is not much used.

Dose—8 grains in pill.

APIUM.

Parsley. The leaves, root, or fruit of *Petroselinum sativum*, Hoff. (*Apium Petroselinum*, Linn.) Aperient and diuretic, and has been found useful in neuralgia and ague, its principal use being for amenorrhœa and dysmenorrhœa.

Extractum Apii Radicis Liquidum.—Miscible with water. *Dose*—15 to 60 minims.

Extractum Apii Fructus Liquidum.—Not miscible with water. *Dose*—15 to 60 minims.

Apiol.—A green oily liquid obtained from the fruit and containing its active properties. It is given for primary amenorrhœa and dysmenor-

rheœ in the form of **Capsules** (5 minims) or **Perles** (3 minims), one being given night and morning for 4 or 5 days during the epoch. In small doses Apiol is diuretic and stimulant to the circulation. The name *Apitol* is also given to a crystalline stearoptene. *Dose*—3 to 15 minims.

APOCYNUM, U.S.P.

American Indian Hemp; Canadian Hemp.—The root of *Apocynum Cannabinum*. A powerful emetic, cathartic, expectorant, and diuretic. It produces nausea, diminishes the frequency of the pulse, and appears to induce drowsiness. It is useful in Bright's disease and dropsy, and very valuable as a hydragogue cathartic, and for removing pleuritic effusion. Its action on the heart resembles Strophanthus rather than Digitalin.—*T. G.* Sept. '89. Contains a resin *Apocynin* and a glucoside *Apocynein*.

Dose of Root—1 to 20 grains.

Tinctura Apocyni.—1 in 10. *Dose*—5 to 40 minims.

Extractum Apocyni Liquidum.—Not miscible with water. *Dose*—5 to 20 minims (as an emetic 15 to 60 minims).

Apocynin.—An eclectic extractive. Must not be confounded with the resin mentioned above. *Dose*— $\frac{1}{2}$ to 1 grain.

APOMORPHINÆ HYDROCHLORAS, B.P.

Hydrochlorate of Apomorphine;
 $C_{17}H_{17}NO_2 \cdot HCl$.—The Hydrochlorate of an alkaloid prepared from Morphine or Codeine by heating with Hydrochloric Acid in sealed tubes. In greyish white crystals, soluble 1 in 70 of water, 1 in 50 of alcohol, insoluble in ether and chloroform. The aqueous solution rapidly becomes green by exposure to the air, owing to traces of ammonia, but loses very little of its efficacy thereby.

A safe, certain, and quick emetic, small doses being expectorant. It causes free vomiting followed by sleep, and no subsequent nausea, and is useful in such forms of poisoning as carbolic acid, etc., also alcoholic intoxication and sunstroke. As an expectorant it is useful in bronchial asthma, and given with an equal quantity of Morphine every 2 or 4 hours it lessens the cough and increases the fluidity of the sputa. It relieves the spasm of hiccup, chorea and epilepsy.

On the eye its solution acts similarly to Cocaine, but its action is followed by nausea.—*T. G. Aug. '85.*

Dose— $\frac{1}{3}$ to $\frac{1}{10}$ grain as an expectorant: $\frac{1}{10}$ to $\frac{1}{2}$ grain as an emetic by the mouth; $\frac{1}{10}$ to $\frac{1}{8}$ grain hypodermically.

Injectio Apomorphinæ Hypodermica,
B. P.— $\frac{1}{10}$ grain in 5 minims. *Dose*—2 to 8 minims as an emetic. Becomes coloured by keeping (see above).

Hypodermic Tablets.— $\frac{1}{5}$ and $\frac{1}{10}$ grain each.

Syrupus Apomorphinæ Hydrochloratis, **B. P. C.**— $\frac{1}{2}$ grain in 1 ounce.

Dose— $\frac{1}{2}$ to 1 fluid drachm.

ARAROBA.

Chrysarobine; Goa Powder; Chrysarobinum, B. P.* (Crude).—A powdery deposit found in the wood of *Andira araroba* (Leguminosæ), a tree of Brazil. A rough powder of a light yellow colour, but usually darkened by exposure to light and moisture to a dull-ochrey, pale-brown, or even umber-brown or dark-purple colour. Taste bitter.—*P. J. Ind. i. 503.*

This substance was first brought into notice by Mr. D. S. Kemp in 1864, and named by him *Chrysarobine*. The name *Chrysarobin* is now

* Although the *B. P.* gives 'Goa Powder' as a synonym, the description given therein applies only to the purified product.

adopted for it by the *B.P.*, as also for the same substance 'purified by solvents' and which is erroneously termed *Chrysophanic Acid* (see below).

Araroba is a very valuable remedy in skin diseases, especially psoriasis and ringworm. The usual method is to mix the powder with lime-juice or vinegar and apply to the part, but a more convenient form is

Chrysarobine Solution.—A solution of Araroba in a hydrocarbon. This dries rapidly and is easily applied.

Chrysarobine Pomade.—An agreeable form of application for delicate skins.

Chrysarobinum, B.P., Chrysarobin (Purified).—Araroba powder 'purified by solvents.' This is often incorrectly termed Chrysophanic Acid. True Chrysophanic Acid* may be obtained from this by treatment with a caustic alkali and a mineral acid. Chrysarobin is described in the *B.P.* as 'containing more or less Chrysophanic Acid according to age and condition, and yielding much Chrysophanic Acid by oxidation.'

A powerful stimulant and parasiticide in skin diseases, being used for purposes similar to Araroba which it has in many cases displaced. It has been given internally for psoriasis, but owing to its severe purging properties, a sufficient quantity cannot be administered.

Dose— $\frac{1}{2}$ to $\frac{1}{2}$ grain; as an emetic purge, 8 to 20 grains.

Unguentum Chrysarobini, B.P.—1 in 25. A very useful ointment for ringworm, *dhobies' itch*, etc. A milder ointment, 5 to 10 grains to the ounce, is recommended in cases of eczema, as a strong ointment often causes feverishness and irritation after several days' use.—*M.* It stains the skin and linen yellow, but the stains may be removed with benzene or a weak solution of

Pigmentum Chrysarobini.—1 in 10 of Liquor Gutta Percha. Also with Collodion, any

strength desired. Does not stain the linen.—*B.M.J.* '87, ii. 1139. It has also been recommended to apply a solution in Chloroform to the skin and cover with *Liq. Gutta Percha* or Collodion.

Plaster Mulls contain $\frac{1}{16}$ and $\frac{1}{8}$ grain to the square inch.

ARBUTIN.

$C_{10}H_{14}O_7$.—A white crystalline glucoside obtained from Bearberry leaves (*Arctostaphylos Uva-Ursi*) and other plants. It is non-poisonous and freely soluble in hot water and alcohol. Commercial Arbutin appears to be a mixture of Arbutin and Methyl-Arbutin.

A valuable diuretic, useful in chronic cystitis and inflammatory catarrh of the bladder. It acts as an antiseptic, lessening the formation of pus in cases of purulent inflammation of the bladder and kidneys. It splits up in the system into glucose and hydroquinone.

Dose—15 to 30 grains.

ARECA.

Areca Nut; Betel Nut.—The seed of *Areca Catechu*, Linn. (Palmae), of India. Commonly used throughout the East as a constituent of *pān supari*, in conjunction with the leaves of *Piper Betle** and *chunam* (unslaked lime). It strengthens the gums, sweetens the breath, and imparts tone to the digestive organs.—*P. I.* It is a common ingredient in various dentifrices.

Its chief use in medicine is as a vermifuge, in which capacity it is employed chiefly for the lower animals.

* *Piper Betle*, L. (*Chavica Betle*, Miq.) is a creeper, extensively grown in India. The leaves, known as *pān*, yield on distillation a volatile oil which appears to vary according to the season of collection. The oil from the fresh leaves contains a more volatile constituent, *Chavicol*, which is a powerful antiseptic, 5 times stronger than carbolic acid and twice as strong as eugenol. Chavicol is not found in the oil obtained from the dried leaves. Betel Oil also contains *Terpene*, *Betel-Phenol*, and *Sesqui-terpene*.—*K. Jan. '90*; *Ph. J. Mar. 15, '90*.

It contains three alkaloids—*Arecoline*, ($C_8H_{15}NO_2$), a colourless oily liquid, to the extent of under 0·1 per cent., which is the active constituent, and resembles Pelletierine ($C_8H_{15}NO$) both in composition and action; *Arecaine* ($C_8H_{11}NO_2 \cdot H_2O$), said to be inert; and a third in very small quantity.—*K. Jan. '90*; *B. M. J. (Supplement)*, Oct. 11, '90. See also p. 303.

Dose—60 to 90 grains; 60 grains made into a ball answers for a large dog.

Extractum Arecæ Liquidum.—Not miscible with water. An untrustworthy form.
Dose—2 drachms.

A.R.I.S.T.O.L.

Di-thymol Di-iodide.

($C_6H_5CH_3OI.C_6H_7$).—Prepared by treating an alkaline solution of Thymol with a solution of Iodine in Potassium Iodide. A light, reddish brown powder, containing 45·8 per cent. of Iodine, tasteless and quite odourless when fresh, but soon developing a very faint iodine flavour. Insoluble in water, slightly soluble in alcohol, freely in ether and fixed oils. It is very liable to decomposition on exposure to light and heat, and on this account should be kept in dark bottles, and heat avoided when dissolving it in oil, vaseline, etc. It is also incompatible with carbonates, caustic alkalies, ammonia, etc.

A valuable substitute for Iodoform, its freedom from odour being greatly in its favour. It is not absorbed by the system, and is consequently non-poisonous. Specially recommended for lupus, psoriasis, ringworm, eczema, and ulcers of various kinds. Its lightness renders it particularly suitable as a dusting powder. It has also been found useful for piles, as well as for burns and scalds.

Colloidum Aristol.—10 per cent.

Unguentum Aristol.—5 and 10 per cent. in Lanolin or Vaseline.

Oleum Aristol.—10 per cent.

Liquor Aristol ~~M~~ethereus.—10 per cent. solution in Ether.

May also be used in the form of suppositories, bougies, gauze, and wool.

Cases of varicose ulcer with eczema and lupus vulgaris of the face cured with 10 per cent. ointment; no iodine detected in the urine, while Iodoform produced toxic symptoms.—*M. R.* Sept. '90.

Carvacrol Iodide and Europhen.—These are Iodine compounds of Carvacrol and Orthocresol respectively, and find similar employment to Aristol.

Iodphenin.—A combination of Iodine and Phenacetin, also used as a substitute for Iodoform.

Dermatol.—See page 59.

ARSENICUM.

The following are the salts most generally in use:—

Acidum Arseniosum, B.P.; Arsenious Acid; White Arsenic; Arsenious Anhydride, As_2O_3 .—Obtained by roasting Arsenical ores. A heavy white powder.—*Dose*— $\frac{1}{10}$ to $\frac{1}{3}$ grain.

Liquor Arsenicalis, B.P. Fowler's Solution; Liquor Potassae Arsenitis.—1 per cent. *Dose*—2 to 8 minims.

Liquor Ammonii Arsenitis.—Same as last, with Ammonia in place of Potash.

Liquor Arsenici Bromatus, Clemens' solution of Arsenite of Bromine.—1 per cent. A colourless solution, recommended for epilepsy and diabetes. May be continued for months without the usual effects of an arsenical course.

Pilulas Acidi Arseniosi (Gelatine coated) $\frac{1}{3}$ and $\frac{1}{5}$ grain each.

Pilulas Ferri Arsenicales (Gelatine coated).— $\frac{1}{6}$ grain Arsenic and 3 grains Dried Sul-

phate of Iron each. The combination with Iron increases the tonic effect.

Several mineral waters contain Arsenious Acid; *La Bourboule* contains $\frac{1}{16}$ grain per pint, *Lerico* $\frac{1}{10}$ to $\frac{1}{5}$ grain per pint, *Guber* $\frac{1}{5}$ grain per pint, along with Iron.

Arsenii Iodidum, B.P. As I₃.—Orange-coloured crystals, which gradually decompose on exposure to the air. *Dose*— $\frac{1}{50}$ grain in pill.

Liquor Arsenii et Hydrargyri Iodidi, B.P., Donovan's Solution.—1 per cent. *Dose*—10 to 30 minims, diluted. Incompatible with acids, morphine, and mercuric chloride.

Donovan's Solution Granules.—Equal to 5 minims each. *Dose*—1 or 2 granules, 2 or 3 times a day.

Arseniates.—See INDEX.

ASEPTOL.

Sulphocarbolic Acid ; Orthophenol-sulphonic Acid ; Sozolic Acid. C₆H₅OHSO₃H.—A reddish liquid, prepared by combining Carbolic and Sulphuric Acids. Properties similar to, but stronger than, Salicylic and Carbolic acids. Soluble in water, alcohol, and glycerine, a 33 per cent. solution being recommended in preference to Carbolic Acid. This solution is less caustic than Carbolic Acid, and hardly at all toxic.

A 3 per cent. solution is recommended in gingivitis and pyorrhœa: reduces the swelling, arrests the flow of pus, and brings the gums to their natural shape.—*Ph. J.* Apr. 30, '87.

ASPIDOSPERMINE.—See page 243.

ATROPINA, B. P.

Atropine ; Daturine. C₁₇H₂₃NO₃.—An alkaloid found with Hyoscyamine in *Atropa Belladonna* and *Datura Stramonium*. In white needles, very slightly soluble in water, freely

soluble in alcohol, chloroform, glycerine, and oleic acid, and 1 in 36 of ether.

Atropine is isomeric with Hyoscyamine, into which it may be converted, the form known as 'light Atropine' being identical with Hyoscyamine. Atropine melts at 114° C. and is optically inactive; Hyoscyamine melts at 109° C., and is laevogyrate; consequently these characters must be taken to describe the respective alkaloids, rather than botanical source. (See also **Hyoscyamine**.) Atropine is decomposed by baryta water or hydrochloric acid into Tropic Acid and Tropine; the latter combines with mandelic and other acids to form salts. These salts, acted upon by hydrochloric acid, produce a series of bodies known as *Tropeines*, one of such bodies being **Oxytoluyltropeine** or **Homatropine**, which, like Atropine, forms salts with acids (see page 50).

Atropine and its salts applied to the eye dilate the pupil and paralyse the accommodation, and are therefore used for ophthalmic purposes. They are antagonistic to pilocarpine, opium, Calabar bean, muscarine, aconite, bromal, and prussic acid. They have also the property of checking night sweats, uterine discharges, milk, and saliva.—*Ring*. They are used internally, hypodermically, and externally.

Antidotes.—Same as for Belladonna.

Linimentum Atropinæ.—4 grains to 1 ounce. For lumbago and rheumatism.

Oleatum Atropinæ.—See page 199.

Unguentum Atropinæ, B.P..—8 grains to 1 ounce.

Atropinæ Sulphas, B. P..—In crystals or powder, freely soluble in water, alcohol, and chloroform. *Dose*— $\frac{1}{2}$ to $\frac{1}{10}$ grain; may be increased to $\frac{1}{5}$ or $\frac{1}{4}$ grain in extreme cases.

Injectio Atropinæ Hypodermica.—4 grains (Sulphate) to 1 ounce. *Dose*—1 to 4 minims. For opium poisoning, also for checking haemoptysis.

Injectio Morphinæ et Atropinæ Hypodermica.—3 minims contain $\frac{1}{2}$ grain Acetate of Morphine and $\frac{1}{80}$ grain Sulphate of Atropine; or may be used half the strength. The Atropine, although in some respects antagonistic to Morphine, yet in small quantity increases the sedative action and counteracts the effects on the head and digestive organs.—*M.*

Dose—1 to 3 minims of the stronger, 2 to 6 of the weaker preparation.

Hypodermic Tablets contain $\frac{1}{50}$, $\frac{1}{100}$, and $\frac{1}{10}$ grain, alone, or combined with Morphine Sulphate. See page 191.

Lamellæ Atropinæ, B. P.—Gelatine discs, containing each $\frac{1}{500}$ grain of Sulphate of Atropine.

Liquor Atropinæ Sulphatis, B. P.—1 per cent. *Dose*—1 to 4 minims.

Pilulæ Atropinæ (Gelatine coated).— $\frac{1}{10}$ grain (Sulphate) each. One at bedtime prevents night sweating. They have a tendency to cause dryness of the throat.

Atropinæ Salicylas.—Soluble 1 in 20 of water. Said to keep better in solution than the Sulphate. *Dose*— $\frac{1}{20}$ to $\frac{1}{10}$ grain.

Atropinæ Santonas.—Soluble 1 in 30 of water. Keeps better in solution than the other preparations, and is unirritating. Solutions must be kept in non-actinic bottles. *Dose*— $\frac{1}{20}$ to $\frac{1}{10}$ grain.

Homatropine, Oxytoluyltropeine.—Homatropine and all its salts act as quick local mydriatics, being more rapid than Atropine, while their effects pass away sooner. They also check night sweats, and are an immediate and certain antidote to Pilocarpine. Homatropine is nearly insoluble in water, but is soluble in oils. *Dose*— $\frac{1}{50}$ to $\frac{1}{10}$ grain.

Oleum Homatropinæ.—2 per cent. in Castor Oil; also with 2 per cent. Cocaine. For dropping into the eye; has the advantage of not

being washed out by the tears. The addition of Cocaine intensifies the action.

Homatropine Hydrobromas, B. P. (Ad.)—In colourless crystals, freely soluble in water. *Dose*— $\frac{1}{40}$ to $\frac{1}{50}$ grain.

Guttæ Homatropinæ.—4 grains Hydrobromate to 1 ounce.

Injectio Homatropinæ Hypodermica.—1 in 120. *Dose*—1 to 6 minims.

Hypodermic Tablets contain $\frac{1}{40}$ grain each.

AURUM (GOLD).

Auri et Sodii Chloridum, U. S. P.—A mixture of equal parts of Chloride of Gold and Chloride of Sodium, containing about 32 per cent. of pure Gold, a smaller percentage than the Codex preparation, which is a double salt of Gold and Sodium, $\text{Au Cl}_3\text{NaCl } 2\text{H}_2\text{O} = 50$ per cent. Gold. An orange-yellow deliquescent powder, freely soluble in water. Its chief use is in photography, but it is also given for syphilis, or used externally as a caustic.

Dose— $\frac{1}{50}$ to $\frac{1}{30}$, increased to $\frac{1}{2}$ grain. Its solutions should be protected from white light.

Auri Bromidum. AuBr_3 .—A dark brown powder, soluble in water and ether. Recommended for epilepsy and migraine, as being tolerated better than other bromides. *Dose*— $\frac{1}{50}$ to $\frac{1}{20}$, increased to $\frac{1}{2}$ grain, well diluted or in pills, 4 times a day. It causes no bromism except anaesthesia of the mouth.

Auri Iodidum, Au I₃.—A very unstable compound. A preparation of this has been introduced as a proprietary remedy for tuberculosis, being given hypodermically in doses of $\frac{1}{50}$ to $\frac{1}{2}$ grain.

AZADIRACHTA, P.I.

Nim or Margosa Bark.—The bark of *Melia Azadirachta*, Linn. (Meliaceæ), the Nim Tree of India. Used as a tonic and antiperiodic. The leaves are also official, while the root,

flowers, fruit, gum, and oil of the seeds are all used medicinally.—*Pg. I.*, i. 322.

Decoctum Azadirachtae.—*Dose*—As an antiperiodic, 1½ to 3 ounces every second hour previous to an expected paroxysm. As a tonic, 1 to 2 ounces, twice or thrice a day.

Tinctura Azadirachtae.—1 to 8. *Dose*—½ to 2 drachms as a tonic.

The Oil of the Seeds is given in leprosy and applied for rheumatism. Its efficacy in the latter case is probably due to the presence of combined sulphur.

BALSAMUM GURJUNÆ, P. I.

Gurjun Balsam; Balsamum Diptero-carpi; Wood Oil.—An oleo-resin obtained from the trunk of *Dipterocarpus turbinatus*, *D. incanus*, *D. Alatus*, and other species of Indian trees. A transparent, dark-brown, oily liquid, lighter than water, having an odour and taste similar to Copaiba, for which it is frequently used as an adulterant.

It is used like Copaiba for gonorrhœa, and also externally and internally for leprosy, leuco-derma, and similar diseases. It is also used in India as a varnish, to protect wood from the attacks of insects.—*Pg. Ind.*

As an emulsion, or mixed with Extract of Malt, 1 to 4, it is an excellent expectorant, equal to Copaiba, without producing any rash.—*L. May 3, '90.*

Dose—½ to 2 drachms, in emulsion, or capsules; for external application equal parts of the Balsam and Lime Water.

BAPTISIA.

Wild Indigo.—The root of *Baptisia tinctoria*. A mild laxative in small doses, a powerful emetic and cathartic in large; has also antiseptic properties. It is recommended in

scarlatina, typhus, gangrene, and threatened mortification.

Extractum Baptisæ Liquidum.—*Dose*—3 to 10 minims.

Baptisin.—The powdered purified extractive. *Dose*—1 to 5 grains.

BELLADONNA, B. P.

Deadly Nightshade.—The leaves and root of *Atropa Belladonna*. Mydriatic and narcotic; used externally, relieves rheumatism, neuralgia, and pain in general. In combination with Aloes or Sulphate of Iron it is useful in habitual constipation. It checks, or even suppresses, the secretion of the glands, especially the mammary, sudoriparous, and salivary glands, causes dryness of the mouth and throat, and in large doses produces delirium, rash on the skin, flushed face, and weakening of the muscular power.—*Ring.* Contains *Atropine* and *Hyoscyamine*.

Case of poisoning from the application of Belladonna Plasters to the breasts. —*M. R.* Oct. '90.

Antidotes.—Emetics; Chloral; Pilocarpine; Physostigma.

Atropina.—See page 48.

Chloroformum Belladonnæ, B. P. C.—1 (Root) in 1½. Mixed with Olive Oil, 1 to 3, is useful for painful rheumatic affections.—*M.*

Collodium Belladonnæ, B. P. C.—Emplastrum Belladonnæ Fluidum.—Contains Belladonna, Collodion, and Camphor, and is recommended for acute affections of the breasts.

Emplastrum Belladonnæ, B. P.—Made from the Alcoholic Extract of the Root, 1 in 5.

Porous Plasters and **Plaster Mulls** (30 per cent. of Extract) are also prepared.

Extractum Belladonnæ, B. P.—A green extract, prepared from the fresh juice of the leaves and branches. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain, or up to 2 grains if necessary.

Extractum Belladonnæ Alcoholicum, B.P.—From the Root. For making plasters, etc. *Dose*— $\frac{1}{6}$ to $\frac{1}{3}$ grain.

Extractum Belladonnæ Fluidum, U. S. P.—Made from the Root. Miscible with water. *Dose*—1 to 3 minims.

Glycerinum Belladonnæ, B. P. C.—1 in 2. Applied to boils, etc., reduces pain and inflammation. Also applied on lint to the breasts to suppress the milk.

Linimentum Belladonnæ, B. P.—1 (Root) in $1\frac{1}{2}$. A sedative for neuralgia and rheumatism.

Linimentum Belladonnæ Compositum.—1 part Chlorof. Belladon. to 7 Linim. Belladon. Applied on impermeable piline for lumbago.

Linimentum Belladonnæ Ætherium ('Ethereal Tincture of Belladonna').—1 (Root) in $1\frac{1}{2}$. More readily absorbed than Emplast. Belladon., and offers no obstacle to the examination of the heart.—*M. R.* Sept. '90 (ex *Lancet*). For remarks on this and similar ethereal preparations, see **Capsicum**.

Pilulæ Aloin, Belladonnæ, et Strychninæ. Tonic Laxative Granules.—Aloin $\frac{1}{2}$ gr., Extract of Belladonna $\frac{1}{8}$ gr., Strychnine $\frac{1}{100}$ gr. (Gelatine coated.)—For habitual constipation. *Dose*—One morning, noon and night. Where a painless peristaltic action is desired, one may be taken every night or second night at bedtime.

Pilulæ Ipecacuanæ, Belladonnæ, et Nucis Vomicae. Belladonna Cough Granules.—Ipecacuanha $\frac{1}{2}$ gr., Extract of Nux Vomica $\frac{1}{2}$ gr., Extract of Belladonna $\frac{1}{10}$ grain.

(Gelatine coated.)—Very efficacious in the form of cough so prevalent in India. *Dose*—One, 3 or 4 times a day.

Piluleæ Podophylli, Belladonnæ, et Strychninæ.—See page 238.

Succus Belladonnæ, B. P.—*Dose*—2 to 15 minims.

Suppositoria Belladonnæ.—½ grain Extract in each.

Tinctura Belladonnæ, B.P.—1 (Leaves) in 20. *Dose*—5 to 20 minims.

Unguentum Belladonnæ, B. P.—1 to 9.

BENZANILIDE.

Phenyl-benzamide; $C_6H_5CO-NH-C_6H_5$.—A coal-tar product, prepared by the action of Benzoyl Chloride or Benzoic Acid on Aniline. A white crystalline powder, insoluble in water, soluble 1 in 60 of spirit. An antipyretic, similar to Antifebrin, but free from its objectional subsidiary action. Specially suitable for children.—*Ph. J.* Dec. 1, '88.

Dose—1 to 8 grains, for children.

BENZBETAL.

Benzoyl-phenyl-amido-acetic Acid.—A coal-tar product, which has been found valuable in diarrhoea, dysentery, enteritis, and cholera. Its effects on Asiatic cholera are at present being investigated in India.

A white powder, nearly tasteless, insoluble or nearly so in cold water, more soluble in hot water, freely soluble in spirit.

Dose—Not definitely fixed; 6 grammes (93 grains) have been given daily to an adult without bad effects.

BERBERIS.

Barberry.—The root of *Berberis Aquifolium*, an American shrub, also of *B. vulgaris* of Europe,

and other species. Contains a yellow alkaloid, *Berberine*, which is also found in *Hydrastis* and *Calumba* roots, also a colourless alkaloid, *Oxy-acanthine*, and two other alkaloids.

Tonic, stomachic, and antiperiodic. *B. Aquifolium* has the property of starting the secretions as a cathartic and diuretic, and may be advantageously combined with *Cascara Sagrada* for the former purpose in habitual constipation.

Extractum Berberidis Liquidum.—Not miscible with water. *Dose*— $\frac{1}{2}$ to 2 drachms.

Extractum Berberidis Aquifolii Liquidum.—Miscible with water. *Dose*—10 to 30 minims.

Berberina. Berberine. $C_{20}H_{17}NO_4$ —A yellow crystalline alkaloid, insoluble in water. Stimulant, hepatic, antiperiodic, and tonic. *Dose*—1 to 5 grains.

Berberinæ Phosphas.—Soluble 1 in 15 of water. *Dose*—2 to 6 grains.

The Hydrochlorate and Sulphate are also used, but are less soluble.

Berberis Cortex, P. I., Indian Barberry.—The root-bark of *B. Asiatica*, *B. aristata*, and *B. Lycium*, of India. Tonic, antiperiodic and diaphoretic. Contains *Berberine*. A Tincture, Infusion, and Extract are official. An impure watery extract, sold in the bazaars as *Rusot*, is used as a febrifuge, and as a local application in eye diseases.

BETOL.—See page 258.

BAWACHEE.

Bawachi; Karpo Karishi.—The seeds of *Pterolobus corylifolia* (Leguminosæ), India. Used in India as an anthelmintic, in bilious affections, and as a remedy, externally and internally, for leprosy and chronic skin diseases depending on the state of the blood.

Useful in leucoderma, causing disappearance of white patches, and arresting the appearance of fresh patches.—*Ph. J.* Sept. 24, '81.

Oleature of Bhawchee.—For external application. Represents the drug in its most active form.

Tincture of Bhawchee.—For internal administration. *Dose*— $\frac{1}{2}$ to 2 drachms.

BISMUTHUM, B. P.

Bismuthum Purificatum, B. P.—Metallic Bismuth purified by fusion with cyanide of potassium and sulphur, and afterwards with carbonates of potassium and sodium.

Bismuthi Carbonas, B. P., Carbonate or Oxycarbonate of Bismuth. $(Bi_2O_2CO_3)_2H_2O$. A white powder insoluble in water. *Dose*—5 to 20 grains.

Pastiles, containing 3 grains, also with Morphine Acetate $\frac{1}{50}$ grain. —See page 129.

Bismuthi Citras, B. P.— $BiC_6H_5O_7$.—A white powder. *Dose*—2 to 5 grains. Insoluble in water, readily in solution of ammonia, forming

Liquor Bismuthi et Ammonii Citratis, B. P.—5 grains to 1 drachm. *Dose*— $\frac{1}{2}$ to 1 drachm.

Bismuthi et Ammonii Citras, B. P.—Small shining scales, freely soluble in water. Prepared by evaporating the Liquor. *Dose*—2 to 5 grains.

Mistura Bismuthi et Pepsinae Composita.—Each fluid drachm contains, in addition to Bismuth, Pepsin, Ammonia, etc., 3 minimis Liq. Opii Sed., 2 minimis Acid. Hydrocy. dil., 3 minimis Tinct. Nuc. Vom. An excellent digestive. *Dose*— $\frac{1}{2}$ to 1 drachm.

Bismuthi Oleas.—See page 199.

Bismuthi Oxidum, B. P. Bi_2O_3 —A lemon-yellow powder, insoluble in water. *Dose*—5 to 15 grains.

Bismuthi Oxychloridum.—An impalpable white powder, insoluble in water. Recommended by some in preference to the other salts of Bismuth, as being unirritating. *Dose*—5 to 20 grains.

Bismuthi Oxyiodidum. Oxyiodide or Subiodide of Bismuth. BiOI .—A brownish red amorphous powder, possessing the properties of Iodoform without its unpleasant odour. It is applied as an antiseptic to ulcerous sores, and given internally for ulcer of the stomach. *Dose*—5 to 10 grains.

Bismuthum Peptonatum.—A brown powder, recommended as containing 3·5 per cent. of Bismuth in a soluble form. *Dose*—60 to 90 grains.

Bismuthi Salicylas.—A white or pinkish powder, containing 63 per cent. of Bismuthous Oxide, and insoluble in water and spirit. Useful in some forms of diarrhoea and in gastro-enteritic affections, especially of children. *Dose*—5 to 20 grains.

Bismuthi Subnitras, B. P.; Subnitrate, Oxynitrate, or Magistery of Bismuth; White Bismuth. $\text{BiONO}_3 \cdot \text{H}_2\text{O}$. A heavy, white, minutely crystalline powder, insoluble in water. Useful in dyspepsia, vomiting, and diarrhoea. It blackens the excretions. Should be prescribed along with Mucilage of Tragacanth or Compound Powder of Tragacanth, as owing to its weight it does not mix readily with water. Should *not* be prescribed with alkaline carbonates, as effervescence ensues. *Dose*—5 to 20 grains.

Glycerinum Bismuthi.—See page 133.

Lotio Bismuthi.—10 grains to 1 ounce. For eczema.

Pulvis Bismuthi Compositus, Ferrier's Snuff.—Contains 2 grains Hydrochlorate of Morphine in 1 ounce with Bismuth and Acacia. For coryza.

Trochisci Bismuthi, B. P.—2 grs. each. Also with the Bismuth replaced by 1 gr. Sodium Chloride as an **Antacid Lozenge**.

Unguentum Bismuthi.—60 grains to 1 ounce. For herpes, piles, etc.

Dermatol, the new Iodoform substitute is a basic Gallate of Bismuth.

BOLDO.

The leaves of *Boldo fragrans* (*Peumus Boldus*) from Chili and Bolivia. It has tonic properties, and is useful in dyspepsia, rheumatism and liver affections. It is also used for gonorrhœa and atony of the bladder. Contains a glucoside *Boldin* and a volatile oil.

Tinctura Boldo.—1 in 5. **Dose**.—1 to 20 minims.

Extractum Boldo Liquidum.—Not miscible with water. **Dose**.—1 to 4 minims.

Boldin or Boldoin.—The glucoside obtained from the leaves. Has hypnotic properties, and also, it is said, local anaesthetic properties like Cocaine. Its hypnotic powers are said to be greater than those of opium, Indian hemp, chloral, etc. **Dose**.—3 grains, in capsules.

BONDUCELLA, P.I.

Bonduc Seeds.—The seeds of *Cesalpinia Bonducella* (Leguminosæ), an Indian plant. A bitter tonic and antiperiodic in intermittent fevers as well as in debility. The seeds contain a fixed oil, which is used as an embrocation by some native practitioners.—*Pg. Ind.*, i. 499.

Dose of Seeds.—10 to 15 grains.

Pulvis Bonducelleæ Compositus.—Composed of Bonduc and Black Pepper. *Dose*—15 to 20 grains.

BROMAL HYDRAS.

Tribromo-acetic-ortho-Aldehyde. CBr₃CH(OH)₂.—Colourless crystals, which melt in the hand, and are less soluble than Chloral Hydrate. Has been recommended as a hypnotic. It is more active than Chloral Hydrate, but appears to cause pyrosis, vomiting, and diarrhoea.

Dose—2 to 5 grains.

BROMETHYL.—See page 23.

BROMOFORMUM.

Bromoform ; Tri-bromo-methane. CH Br₃.—A heavy colourless liquid of a sweet taste, soluble in alcohol, but only slightly soluble in water. Has been used with success in whooping cough, complicated with pneumonia.—*K. July '90.*

Subcutaneous injections caused narcosis accompanied by a fall of temperature.—*Ibid.*

Given in 100 cases of whooping cough with decided success, in doses of 1 to 3 drops for infants; 2 to 4 years, 4 or 5 drops; 7 years, 6 to 7 drops. Given in a spoonful of water it is easily taken.—*Ph. Rec. Jan. 6, '90.*

Dose—5 to 20 drops.

BRYONIA, U.S.P.

White Bryony ; Vitis Alba.—The root of *Bryonia alba*, Linn. (Cucurbitaceæ). A hydragogue cathartic, chiefly employed for dropsy. It contains 2 glucosides, *Bryonin* and *Bryonidin*, the latter being the active principle. Bryony has recently been found to act as an excellent

haemostatic, an infusion of 1 in 10 being best for internal use. It causes a progressive contraction of the capillaries.—*K. July '90.*

Tinctura Bryoniae, B.P.C.—1 in 10. Prepared from fresh roots of *B. alba* and *B. dioica*, or red bryony (the latter has no haemostatic properties). Given in small doses for pleurisy, in large doses for dropsy. *Dose*—1 to 10 minims.

BUTYL-CHLORAL HYDRAS, B.P.

Hydrate of Butyl-Chloral ; Croton Chloral Hydrate (wrongly so called). $C_4H_9Cl_3O_2H_2O$.—In white crystalline scales, having a pungent odour. Soluble 1 in 50 of water, freely soluble in spirit.

Perhaps the most efficacious remedy in facial neuralgia; very useful in migraine; relieves the lighter attacks experienced by some delicate women after slight fatigue or excitement; of little use in simple toothache.—*Ring.*

Dose—2 to 15 grains. Best administered in a pill, 3 grains every 15 minutes, and then hourly. Up to 10 grains may be given several times a day.—*Ibid.*

Liquefies on mixing with Menthol or Antipyrin. Antidote for poisonous dose—Picrotoxin $\frac{1}{20}$ grain. —*Sq.*

Syrupus Butyl-Chloral, B. P. C.—16 grains to 1 ounce. *Dose*—1 to 4 drachms.

BYNE.—See page 181.

CACHETS.

These are capsules of wafer paper in which any nauseous powder or extract may be enclosed. The Cachet is to be first moistened with water, when it may be swallowed with the greatest ease. They are very useful for such drugs as

Antipyrin or Phenacetin, the large dose of which renders the pill form impracticable.

They are made in three sizes, and medicine may be dispensed 'in Cachets' if so desired.

CAFFEINA, B. P.

Caffeine; Theine; Guaranine;

$C_8H_{10}N_4O_2$.—An alkaloid occurring in (1) the berries of *Coffea arabica* (coffee), 1 to 1·28 per cent.; (2) the leaves of *Camellia thea* (tea), 2 to 4 per cent.; (3) the dried pulp of *Paullinia sorbilis* (guarana), 5 per cent.; (4) the leaves and twigs of *Ilex paraguayensis* (maté or Paraguay tea); (5) the seeds of *Sterculia acuminata* (kola), 2·13 per cent.; (6) present to a small extent in cocoa.—*Watts' Dict. Chem.* Usually prepared from either of sources 1 and 2, by evaporating aqueous infusions from which astringent and colouring matters have been removed.

Caffeine may be indirectly obtained from guano, caffeine being methyl-theobromine, and theobromine being di-methyl xanthine, while xanthine is a derivative of guanine obtained from guano.

In fine silky needles, slightly soluble in water, more soluble in spirit. May be dissolved by the aid of acids, but the salt thus formed is apt to split up throwing out the Caffeine. Taste bitter. A tonic and restorative to the nervous system, stimulating the heart and raising arterial tension. Useful in cardiac dropsey, and better borne than Digitalis. As a stomachic tonic it lessens tissue change and waste. Combined with Paraldehyde is useful as a diuretic in heart diseases.—*C. & D.* '87, 242. Caffeine also relieves bronchial asthma.

Dose—1 to 5 grains.

Caffeinæ Citras, B. P.—A white powder, prepared by mixing Citric Acid and Caffeine in water and evaporating to dryness. The Citrate as formerly met with was a doubtful combination, the Caffeine could be extracted by chloroform; the present Citrate is more definitely

combined, but even now the action of water liberates Caffeine. *Dose*—2 to 10 grains.

Aerated Caffeine Water (in Syphons).—1 grain Citrate in each ounce. *Dose*—One wine-glassful every hour.

Granular Effervescent Caffeine Citrate.—1 grain in one teaspoonful. Also with the addition of **Bromide of Potassium** 2 grains.

Caffeinæ Hydrobromas.—Colourless needles, soluble 1 in 50 of water. *Dose*—1 to 4 grains.

Granular Effervescent Caffeine Hydrobromate.—1 grain in each drachm.

Bromo-Caffeine ($C_8H_9BrN_4O_2$), a substitution product, must not be confounded with the Hydrobromate, or with the proprietary effervescent preparation which is also known as 'Bromo-Caffeine.'

Caffeinæ Sodio-Salicylas.—A white powder, containing 62·5 per cent. of Caffeine, very soluble in water. *Dose*—1 to 4 grains, hypodermically. In endocarditis, rheumatic and acute pericarditis with effusion, and other forms of heart disease, it gives good results.—*T. G.* Oct. '87.

Injectio Caffeinæ Hypodermica.—1 grain Caffeine in 3 minims, rendered soluble by Salicylate of Sodium, with which it combines chemically. An unirritating injection, useful in alcoholic, morphine, and eucalyptus poisoning. *Dose*—1 to 6 minims.

Hypodermic Tablets contain $\frac{1}{2}$ grain each.

Caffeinæ Tri-iodidum.—In red prismatic crystals. Recommended for gout. *Dose*—1 to 3 grains.

Caffeinæ Valerianas.—Used to check nervous vomiting in hysteria. *Dose*—1 to 4 grains.

Cases of poisoning by Caffeine have occurred. The best antidotes are Nitroglycerine and Apomorphine.—*L.* '83, i. 680; '89, i. 219.

CALCIUM.

The Calcium salts are given more as a convenient means of administering the various acids than for the special virtues of the Calcium base, although in some cases the 'lime salts' possess special advantages. The therapeutic value of the various salts, however, depends on the nature of the acid to a very great extent.

Calcii Chloridum, B. P. CaCl_2 .—Known also as 'Muriate of Lime,' to distinguish it from bleaching powder, called 'Chloride of Lime.' In white agglutinated masses, dry, but deliquescent.*

It is employed chiefly in glandular diseases, also for sickness and in tubercular disease.

Liquor Calcii Chloridi, B. P.—1 in 5.
Dose—15 to 50 minims.

Calcii Hippuras; $\text{Ca}(\text{C}_9\text{H}_7\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$.—In white crystals, soluble about 1 in 30 of water. A solvent for urates in gout, gravel and calculus. It is not decomposed by passing through the system. *Dose*—5 to 20 grains.

Calcii Lactas.—See page 12.

Calcii Hypophosphis.—See page 224.

Calcii Permanganas. CaMn_2O_4 .—A deliquescent salt, used as an antiseptic like the potassium salt (see p. 240), but preferred to the latter for mouth lotions, as it has less taste.

Calcii Sulphidum.—See below.

**CALX SULPHURATA,
B.P.**

Sulphurated Lime; Calcium Sulphide; Canton's Phosphorus.—A white or yellowish powder containing not less than 50 per cent. of Sulphide of Calcium, CaS . Very useful for

* This form is much more manageable than the crystals, which absorb water very rapidly and consequently cannot be readily weighed.

boils, acne, carbuncles, suppurating glands, etc. It hastens maturation and prevents the formation of fresh boils.—*Ring*. It has also been suggested for the endemic elephantiasis of Ceylon, but does not appear to have been tried.—*B.M.J.* '87, ii. 1402.

Dose— $\frac{1}{10}$ to 1 grain. For boils, $\frac{1}{10}$ grain every hour. For suppurating glands in the neck, $\frac{1}{2}$ to 1 grain every 2 hours, continued for several weeks.

Sulphide of Calcium Pills (Gelatine coated).— $\frac{1}{10}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{2}$ and 1 grain.

A good sulphurous bath may be made by adding a dilute acid to Sulphurated Lime mixed with water.

Lotio Calcii Sulphurati.*—A clear yellow liquid, said to cure itch in half an hour. Should be diluted with an equal quantity of water and applied to the patient after a bath.

Sulphurated Lime acts internally by liberating sulphuretted hydrogen, an effect which may be obtained in a more pleasant manner by using

Syrupus Sulphatum (Symonds).—Containing in solution the Sulphates of Berberine, Quinine, Iron, Potassium, and Sodium, with Sulphuric Acid, Glycerine, and Spirit of Chloroform. It is useful for boils, etc., sulphuretted hydrogen being formed in the system by the decomposition of the sulphates, while the bases act as tonics. **Dose**—Half an ounce. Also in the form of pills, each equal to two drachms of the Syrup.

Sulphide of Calcium also acts as a harmless and efficacious Depilatory, and forms the basis of some of the best preparations of this class.

* This resembles Vleminckx' solution in its composition.

CAMPHORA, B. P.

Camphor; $C_{10}H_{16}O$.—A stearoptene obtained from the wood of *Cinnamomum Camphora* (Lauraceæ). Supplied in bells, tablets, or sublimed powder known as **Flowers of Camphor**. Stimulant, afterwards sedative; anti-spasmodic; diaphoretic; a mild antiseptic.

Dose—1 to 10 grains.

Official Preparations.—Aqua; Linimentum 1 in 5; Linimentum Compositum 1 in 8; Spiritus 1 in 10; Tinctura Composita (one of Opium in 240).

Unofficial Preparations in Common Use.—Camphor Ball; Camphorated Chalk and Camphorated Myrrh Dentifrices; Rubini's Camphor (a saturated solution); Pills, Lozenges, Pilules, etc.

Essential Oil of Camphor (Japanese).—Obtained as a bye-product in the manufacture of Camphor. Varies in colour; sp. gr. 0·898 to 0·990. It contains a variable amount of Camphor in solution, and is used by the Chinese as a rubefacient. — *Ph. J.* Sept. 24, '87.

Camphorated Carbolic Acid.—See page 7.

Elixir Camphoræ.—1 in 15. Miscible with water. *Dose*— $\frac{1}{2}$ to 1 drachm.

Camphora Monobromata, Monobromide of Camphor, Bromo-Camphor; $C_{10}H_{15}BrO$.

A substitution compound of Camphor, in colourless prisms, soluble in spirit, ether, and chloroform; sparingly soluble in water and glycerine. Odour and taste camphoraceous. A hypnotic and sedative in hysteria, epilepsy, delirium tremens, etc., but its use requires caution. Said also to be an antidote to Strychnine. *Dose*—2 to 10 grains; in pill, or **Elixir** (4 grains to 1 ounce).

Camphora Salicylata.—See page 18.

Camphoric Acid; $C_{10}H_{16}O_4$.—A white crystalline substance, having an acid taste, with

difficulty soluble in water, but readily soluble in alcohol, ether, or fixed oils. It is prepared from Camphor by oxidation with Nitric Acid. Recommended for the treatment of acute and chronic affections of the respiratory passages, a 1 per cent. solution being applied. In acute angina $\frac{1}{2}$ to 1 per cent. solution every 3 hours is also recommended.—*Ph. J.* Dec. 29, '88. Has also been found serviceable in checking the night-sweats of phthisis, in doses of 2 to 3 grammes. The effects were sometimes not manifested the first night after administration, but became apparent on the following and other nights.—*Ph. J.* June 28, '90.

CANNABIS INDICA, B.P.

Indian Hemp: Haschisch.—The dried flowering tops of the female plants of *Cannabis sativa*, Linn. (Urticaceae), from which the resin has not been removed. Cultivated in India. The following are the native names applied to Cannabis in its different forms:—

Gunjah—the dried flowering tops.

Churrus—the resinous exudation.

Bhang, Subjee, or Sidhee—the larger leaves or capsules.

Majun.—A sweetmeat composed of *Bhang*, butter, and flour.

A sedative, analgesic, and hypnotic. For headaches of a continuous or chronic character, the extract is given in doses of half a grain night and morning, gradually increased to two grains at night, and one and a half in the morning, and persevered in steadily. In chronic opium-poisoning, $\frac{1}{2}$ grain, increased to $\frac{1}{2}$, 1, and $1\frac{1}{2}$ grain, 3 times a day, and then gradually withdrawn.—*L. Mar. 30, '89.* In summer diarrhoea, 10 minum doses of the Tincture have been recommended, in conjunction with other remedies, as not interfering with the digestive functions, but rather improving them.

Cannabis is a true sedative to the stomach, without the inconvenience of chloral, bromides, or opium. In gastric disorders, chiefly non-organic affections of the stomach, it relieves pain and increases the appetite. $\frac{1}{2}$ grain of the Extract, 3 times a day, with large doses of alkalies and mild aperients, is the maximum dose tolerated. —*J. Sept. 20, '90.*

Extractum Cannabis Indicæ, B. P.
Alcoholic. *Dose*— $\frac{1}{2}$ to 1 grain.

Tinctura Cannabis Indicæ, B. P.—1 (Extract) in 20. *Dose*—5 to 20 minimis, with mucilage; not miscible with plain water.

Cannabin Tannas, Cannabis Tannate. —A yellowish brown powder prepared from Cannabis Indica. It is insoluble in water or ether, slightly soluble in alcohol, freely soluble in water rendered slightly alkaline. Recommended as a hypnotic, especially in nervous sleeplessness and acute mania. Unlike opium and morphine, it does not derange the secretions, nor does it leave any toxic after effects. It is said to be free from the irritating volatile oils present in the drug.

Dose—2 to 10 grains, may be increased to 20 grains. Average dose, 4 grains, an hour before bed-time.

Cannabinon.—A dark brown resin, semi-liquid. Has been used as a sedative in mania, sleeplessness, etc., and is said to be more certain than the above. *Dose*— $\frac{1}{2}$ to 1 grain.

Cannabine, the pure alkaloid, is a brown syrupy liquid, and is recommended as a hypnotic in doses of 1 to 5 grains daily.

A crystalline alkaloid, *Tetano-cannabine*, having an action similar to strychnine, has also been isolated.—*Ph. J. xiii. 998.*

CAPSICI FRUCTUS, B. P.

Capaicum.—The fruit of *Capsicum fastigiatum* (Solanaceæ). The powder is known as

Cayenne or *Nepaul Pepper*. Internally, used as a stimulant and corrective, externally as a rubefacient. As a snuff, it is used with Borax and Carbonate of Ammonium for hay fever.

Contains a crystalline principle, *Capsaicin*, which causes violent griping and purging in doses of $\frac{1}{3}$ grain.—*Thresh.*

Tinctura Capsici, B.P. 1 in 27. *Dose*—10 to 20 minims.

Tinctura Capsici Fortior, B.P.C.—1 in 3. Identical with Dr. Turnbull's Tincture. *Dose*—1 to 3 minims, chiefly used externally.

Linimentum Capsici.—1 in 10. For chest affections, rheumatism, etc. Does not blister the skin, and its action may be arrested by smearing with vaseline. *M. p.* 96.

Tinctura Capsici Aetherea.—Same strength as B. P., made with pure ether.* Applied on spongio-pilinc it is a most efficient rubefacient, or it may be used as a liniment, 1 in 4, with Ammonia, Turpentine, and Linseed Oil.—*M. R.* Sept. '90.

Oleo-Resina Capsici, U.S.P., Capsaicin. Obtained from Capsicum by treatment with ether, and subsequent separation of fatty matter. A thick red liquid, soluble in alcohol, ether, and oil of turpentine.

Unguentum Oleo-resinæ Capsici, B.P.C.—1 in 5½.

Emplastrum Capsici, U.S.P.—Spread on muslin, etc., and containing $\frac{1}{4}$ grain Oleo-resin in each square inch.

Collodium Capsici.—15 grains to 1 ounce.

*The use of ether as a menstruum for drugs applied to the skin has a warm advocate in Sir James Sawyer. Owing to its solvent action on the sebaceous secretion of the skin, it has a much greater penetrating power than other forms of application, while it also possesses the advantage of being a solvent for many active drugs. (See also pages 54, 165, 185).—*M. R.* Sept. '90, *et Lancet*.

CARBONIS TETRACHLORIDUM.

Tetrachloride of Carbon ; Tetra-chloro-methane. CCl_4 .—A colourless, chloroform-like liquid, with a pleasant ethereal odour. Sp. gr. 1.56. It is used, though not extensively, as an application for neuralgia to relieve pain, and is also inhaled for hay fever. Has also been used as an anesthetic like chloroform, but is not satisfactory.

CARNIS EXTRACTUM.

Extract of Meat ; Liebig's Extract. Prepared by concentrating an aqueous infusion of meat. This article, as imported from South America, is seldom fresh : preference should, therefore, be given to preparations made in India, of which the following are most popular :—

Extractum Carnis Liquidum, Nutritive Extract.—A liquid extract of meat, in form most convenient for the sick-room.

Extract of Beef.—Prepared in the same manner as the South American extract, the infusion being thoroughly filtered before evaporation. This removes particles which would tend to impair its keeping qualities.

Extract of Mutton.—Similar to the last but prepared from mutton.

Extract of Chicken.—This is prepared from chicken in a similar manner, and is preferred generally by invalids as being more grateful.

Other Meat Preparations—

Essence of Beef, Brand's.—In tins. It is prepared by exhausting beef with tepid water, and occurs as an amber-coloured jelly, nearly always liquid in India. Should be taken in teaspoonfuls either alone or with bread and wine, after standing in ice.

Essences of Mutton and Chicken are also prepared.

Peptonised Beef Jelly.—See page 205.

Liquor Carnis, Caffyn's.—The uncooked juice of meat, permanently preserved by the addition of a carbohydrate. A reddish brown liquid, sweet to taste, clear or very faintly cloudy. Said to be peculiarly rich in albuminoids, very readily absorbed, and unirritating to the digestive organs. *Dose*. A dessertspoonful with milk, lime-juice, or water, but not with spirituous liquids, acids, or hot water, which coagulate the albumen.

Meat Juice, Valentine's.—A dark reddish brown liquid, prepared in America by concentrating in vacuo the expressed juice of meat. *Dose*. A teaspoonful to be mixed with 3 tablespoonfuls of cold water and one tablespoonful taken for a dose. Hot water is incompatible on account of the albumen present.

Sanguis Bovinus Exsiccatus, Dried Bullock's Blood.—In blackish red scales, soluble in water. The blood, having been freed from fibrin, is evaporated gently to dryness. Recommended as a nutritive enema, 1 to 8 of tepid water; also internally in tablespoonful doses of the same solution.

Vinum Carnis, Nutritive Wine.—One ounce contains the soluble ingredients of half an ounce of meat. This and the following are good tonics for convalescents.

Vinum Carnis cum Ferro, Nutritive Wine with Iron.—Closely resembles the preparation sold as 'Beef and Iron Wine.'

Creatine.—A substance ($C_4H_9N_3O_2$, or Methyl-guanido-acetic acid), occurring in flesh, and which has been recommended for debility and as a muscular stimulant. It is considered advantageous to administer this form in affections of the stomach, the gelatinous constituents of Extract of Meat being injurious under such conditions.—*Ph. J.* Dec. 29, '88. *Dose*—1½ grains, 4 to 6 times daily.

CASCARA AMARGA.

Picramnia Bark; Honduras Bark.—The bark of an undetermined species of *Picramnia*.—Recommended as a tonic, alterative, and antisyphilitic.

Extractum Cascara Amarga Liquidum.—Not miscible with water. *Dose*—30 to 60 minims.

CASCARA SAGRADA.

Sacred Bark; Rhamni Purshianii Cortex, B. P.—The dried bark of *Rhamnus Purshianus*, a North American tree. Laxative and tonic, in large doses cathartic. Especially indicated in habitual constipation as a tonic laxative. Given in small doses, at regular intervals, it imparts tone and restores the normal action of the bowels.

Also recommended for rheumatism, 10 minims Liq. Extract with 15 gr. Sol. Salicyl. every 3 or 4 hours.—*T. G.* Oct. '88.

Dose—3 to 15 grains, in powder.

Extractum Cascareæ Sagradæ Liquidum, B. P.—*Dose*—10 to 60 minims.

Cascara Capsules.—Representing each half a drachm of Liquid Extract. *Dose*—One or two.

Cascara Lozenges.—Containing 2 grains solid extract in each, prepared with chocolate. *Dose*—Children, 1 Lozenge, —adults, 2 or 3, at bedtime.

Cascara Pills (Gelatine coated).—3 grains solid extract in each. *Dose*—One or two.

Elixir Cascara Sagrada, B.P.C.—One of Liquid Extract in $2\frac{1}{2}$. The bitter taste is agreeably disguised by aromatics. *Dose*—15 to 120 minims.

Syrupus Cascara Sagrada, B. P. C.—One of Liquid Extract in 5. Suitable for children. *Dose*—1 to 4 drachms: for children $\frac{1}{2}$ to 1 drachm.

Cascara Sagrada bark and preparations possess a very nauseous bitter taste, which long prevented their general adoption in medicine. This taste appears to be due to the presence of a glucoside, to which the tonic properties of the drug are due, and which is tasteless in itself, but becomes bitter when acted upon by a ferment also present in the bark. The laxative action is due to a brown tasteless resin. A red and a yellow resin are also present, both of which are tasteless and inert. The resins exist in combination with ammonia, which renders them soluble in water, thus explaining the greater medicinal activity of fresh bark, as well as the fact that on standing for some time the liquid extract becomes tasteless and inert, the resin being precipitated owing to the instability of ammonia salts. In fresh bark, the glucoside referred to may be extracted almost free of bitterness, and will develop its bitter tonic properties on coming in contact with the gastric juice. It ought, therefore, to be possible, in spite of what some writers say to the contrary, to prepare a comparatively tasteless extract from Cascara, and one which will contain all the elements to which the tonic and laxative properties are due. The appearance of many inert preparations in the market, and consequent discredit to the tasteless preparation, may be explained by the above facts, the *entire resin* having been removed from these preparations.

Extractum Cascara Sagrada Insipidum.—Almost tasteless, and forms a clear mixture with water. *Dose*—10 to 60 minims.

Liquor Cascara Aromaticus.—Half the strength of the preceding, contains aromatics, alcohol, and saccharin. *Dose* 1 to 3 drachms. Also useful as a corrigent and adjuvant to constituting drugs.

CAULOPHYLLIN.

A brown resinoid powder obtained from the root of *Ondophyllum thalictroides* (Berberidaceae)

(Blue Cohosh, Squaw Root, or Papoose Root, U.S.P.) Anthelmintic, diuretic, and diaphoretic: used principally as an emmenagogue, parturient, and antispasmodic. It has a direct influence on the uterus, checking contractions in cases of threatened abortion, and may be given in cases where ergot is not available.

Dose—1 to 4 grains.

Liquor Caulophylin et Pulsatillæ

Co.—A proprietary preparation, recommended as a uterine tonic and sedative. Combines the action of the two drugs. —*L. June 8, '89.* *Dose*—One drachm.

Pilulas Caulophylin et Pulsatillæ

Each represents one drachm of the Liquor.

CHEKAN.

Cheken; Chequen.—The leaves of *Myrtus Chekan* (*Eugenia Chequen*), Myrtaceæ, a shrub growing in Chili. Contains 1 per cent. of volatile oil, which is the most important constituent, also *Chekenic Acid*, *Chekenon*, *Chekenetin*, and a bitter principle. Possesses tonic, expectorant, diuretic, and antiseptic properties, and has been used with success in bronchitis, catarrh of the bladder, and other affections of the mucous membrane.

Extractum Chekan Liquidum.—Not miscible with water. *Dose*—1 to 3 drachms.

CHIMAPHILA, U. S. P.

Pipsissewa.—The leaves of *Chimaphila umbellata* (Ericaceæ). Tonic, diuretic, and astringent. Used in scrofula, rheumatism, chronic catarrhal affections of the bladder, dysuria, albuminuria, and gleet.

Extractum Chimaphilæ Fluidum, U. S. P.—*Dose*—30 to 60 minims.

CHINOLINUM.

Chinoline ; Quinoline. C₉H₇N.—A transparent, oily liquid, with a peculiar penetrating odour, soluble in alcohol, ether, and oils, but only slightly so in water. Colourless when freshly prepared, but becomes dark on keeping. Prepared synthetically from Aniline, Nitrobenzol, Glycerine, and Sulphuric Acid, but may also be obtained as a derivative of Cinchonine and Quinine. A powerful antiseptic and antipyretic. Its antiseptic properties are apparent even in an aqueous solution, which forms a good injection for gonorrhœa. One part in 50 of Rectified Spirit and 500 of Peppermint Water has been recommended as a gargle for diphtheria. Internally it is used in enteric and intermittent fevers and neuralgia.

A 0·1 to 0·2 per cent. solution, with sodium chloride and glycerine, has been found very useful as a preservative for anatomical specimens, preserving the tissues in their natural condition, except that they lose their colour. *Ph. J.* Dec. 22, '89.

Dose. 3 to 10 minims. The Tartrate being more soluble is better adapted for use in medicine.

Chinolini Tartras, Quinoline Tartrate.—In odourless, white crystals, nauseous in taste, soluble about 1 in 40 of water. Recommended as a cheap substitute for Quinine, having been used with great success as such in many parts of India. *Dose.* 5 to 15 grains.

Chinolini Salicylas. Being less soluble than the above, this salt is not much used.

**CHLORAL
B. P.****HYDRAS,**

Hydrate of Chloral ; Tri-chloro-acetic-ortho-aldehyde. CCl₃. CH(OH)₂.—Prepared by acting on anhydrous alcohol with chlorine gas, purification, and hydration with water. In colourless crystals, non-deliquescent, having

a characteristic odour and taste. When heated it fuses, boils, and finally volatilises without residue. Should have no odour of chlorine, and when suitably treated, should yield at least 70 per cent., by weight, of chloroform. Freely soluble in water, ether, chloroform, and glycerine. One minim of water will hold 1 grain in solution.

A valuable hypnotic, especially for nervous subjects, where opium and Indian hemp disagree. It is often combined with opium, morphine, or bromides. Applied locally, sprinkled on adhesive plaster, it acts as a painless vesicant — *F. B.* '87, 288. Two drachms in a tumblerful of brandy and water, sponged well over the body at bed-time, checks the night-sweats of phthisis. — *T. G.* Feb. '89. A solution 5 grains to 1 ounce is said to be a remedy for dandruff and baldness. Internally it is useful for tetanus, delirium tremens, and as an antidote to strychnine. A solution of Chloral Hydrate from 12 to 30 grains to the ounce, is a powerful antiseptic, and is useful for preserving zoological and other specimens, having advantages over methylated spirit.

Dose—5 to 30 grains; the taste may be covered by well diluting with chloroform water, or the addition of syrup of orange.

Incompatibles.—Quinine; alkalies (which liberate chloroform).

An over-dose of Chloral Hydrate causes cramp, swimming in the head, flushed face, and sometimes death. *Antidotes*.—Emetics, strong coffee, means to prevent sleep, artificial respiration if necessary, inhalations of amyl nitrite, hypodermic injections of $\frac{1}{3}$ grain nitrate of strychnine.

$\frac{1}{20}$ grain of picrotoxin is sufficient for 30 grains of Chloral. — *B. M. J.* '75, i. 506.

Chloral cum Camphora, B. P. C.—Equal parts of Chloral Hydrate and Camphor, which form a clear liquid when rubbed together. Recommended as an application for neuralgia and rheumatism, painted over the painful part.

The alkaloids, morphine, atropine, and veratrine are soluble 1 in 30 in this preparation, but their salts are not. Chloral and Camphor should not be mixed with water or glycerine as the camphor will be precipitated.

The addition of Cocaine, 1 in 10, is a useful application for toothache from dental caries.—*R. M. J.* '86, ii. 131. (See also page 91.)

Chloral et Phenol.—Equal parts of Chloral Hydrate and Carbolic Acid, which form a liquid similar to the last.

Liquid preparations are also formed by mixing Chloral Hydrate with Thymol, Menthol, and Quinine salts.

Suppositoria Chloral. 5 grains each. For infantile convulsions.

Syrupus Chloral, B. P. 80 grains to 1 ounce. *Dose* $\frac{1}{2}$ to 2 drachms.

Bromidia. An American nostrum said to contain in each fluid drachm 15 grains Chloral Hydrate, 15 grains Potass. Bromid., $\frac{1}{2}$ grain Ext. Cannab. Ind., and $\frac{1}{2}$ grain Ext. Hyoscy. *Dose*—One fluid drachm.

Meuphrosine.—Another patent remedy, recommended as a hypnotic, contains probably an ether of nitro-phenol as its active constituent.—*K. July '90.*

Chloral-Ammonia, $\text{CCl}_3 \cdot \text{CH}(\text{OH}) \cdot \text{NH}_3$. A white crystalline salt, insoluble in cold water, decomposed by hot water. It is formed by passing Ammonia into a solution of Chloral in Chloroform, and has been recommended as a hypnotic, it being supposed that the amidogen which replaces one of the hydroxyl groups would act as a stimulant, counteracting the objectionable effects of Chloral Hydrate. Has no disturbing influence on the stomach. *Dose*—5 to 20 grains.

Chloral-Imide, $\text{CCl}_3 \cdot \text{C}(\text{NH})\text{H}$.—Prepared by the action of heat on Chloral-Ammonia. In colourless tasteless needles, slightly soluble in

water, more so in alcohol, freely in ether. Must not be confounded with **Chloralamide** (see below). In contact with a mineral acid it is decomposed into Chloral and the corresponding ammonia salt; this reaction does not occur with organic acids. Action powerfully antipyretic and analgesic, also hypnotic, being said to be a more active hypnotic than Chloralamide. *Dose*—4 to 8 grains as an antipyretic; 5 to 30 grains as a hypnotic. *Ph. J.* Mar. 29, '90; *K.* July '90.

Chloral Cyanhydrate. $\text{CCl}_3\text{CH}(\text{OH})\text{CN}$.—A combination of Chloral and Prussic Acid. In crystals, soluble in water, alcohol, and ether. Act. in similar to Hydrocyanic Acid, 6·46 parts being equal to 1 of the latter. It is not prone to decomposition in aqueous solution. A solution in water has been proposed as a substitute for cherry laurel water, and such preparations as owe their action to Hydrocyanic Acid.

Chloral and Antipyrin combinations.
See page 40.

CHLORALAMID.

Chloralamide; Chloral Formamide. $\text{CCl}_3\text{OH} \cdot \text{CHO} \cdot \text{NH}_2$.—In small colourless crystals, said to be soluble 1 in 9 of water (about 1 in 15 would be more correct), and 1 in $1\frac{1}{2}$ of alcohol 96 per cent. Taste mild, slightly bitter, not caustic. It keeps well in aqueous solution, except in temperatures over 112° F . On heating in a dry tube it decomposes, giving off chloral, and also when treated with an alkali, liberating chloroform and ammonia. It does not reduce Fehling's solution.

A valuable hypnotic, similar to Chloral Hydrate in action, but free from all influence on the heart and digestive organs. It is recommended in all cases of insomnia which are not the direct result of violent pain or severe excitation of the nervous system. It produces sleep

in from half to one hour, lasting 7 to 9 hours. Has been tried in a large number of cases, with very satisfactory results.—*Ph. J.* Nov. 2, '89; *L.* Oct. 26, '89; *K.* Jan. '90.

Dose—20 to 50 grains, preferably in slightly acidulated solution. It is incompatible with alkalies. Best dissolved in a little brandy, and cold water added.

CHLOROFORMUM, B. P.

Chloroform; Terchloride of Formyl; Trichloro-methane. CHCl_3 .—A colourless, volatile liquid, prepared by carefully distilling a mixture of Slaked Lime, Chlorinated Lime, and Spirit. Freely soluble in alcohol, ether, and oils, but only to the extent of about 1 in 200 of water. It dissolves mastic, gutta-percha, and most resins, also iodine, bromine, and many of the organic alkaloids. Sp. gr. 1.497; it contains 1 per cent. of alcohol to prevent decomposition. A little dropped on the back of the hand should evaporate speedily and completely, leaving no unpleasant odour. A pure Chloroform is now largely manufactured from Acetone, by acting on it with Chlorinated Lime.—*Ph. J.* Aug. 3, '89.

Chloroform is largely used as an anaesthetic. Internally it acts as a sedative and antispasmodic. Applied externally, it relieves the pain and itching of mosquito-bites. Its chief use, however, is as a general anaesthetic for surgical operations, although in this respect it has of late years been largely displaced by Ether owing to its tendency to reduce the blood pressure, and its very uncertain action on the heart. Its vapour and aqueous solution are powerfully anti-septic, and are largely used to preserve animal and vegetable matters from decomposition.

For the simultaneous use of **Cocaine** and **Chloroform**, see page 92.

According to the report of the Hyderabad Commission, it would appear that death from Chloroform is really due to its checking the

power of respiration. A small dose of Morphine is recommended to be given simultaneously for prolonged operations; or alcohol may be first administered to steady the circulation and give the patient confidence. With these and other precautions, Chloroform may be administered without danger. *L.* '90, i. 149, 421, 486, etc.

Compared with Ether as an anesthetic, see page 21.

When the pupil contracts in the stages of insensibility there is no danger: when it dilates, danger is to be apprehended.—*Ring.*

Antidotes—Fresh air; artificial respiration; Nitrite of Amyl.

Dose of Chloroform—1 to 10 minimis.

A. C. E.—Known also as *Bryant's Anesthetic*. A mixture of Alcohol (1), Chloroform (2), and Ether (3), the proportions being arranged so that the mixture shall evaporate at a uniform rate. Said to be safer than Chloroform and quicker than Ether. It is particularly recommended for use in midwifery.

Chloroform Capsules.—10 minimis enclosed in a glass tube covered with wool.

Chloramyl.—Chloroform, containing 2 drachms Amyl Nitrite to 1 pound. Not much used.

Regnauld's Anesthetic.—Chloroform 4. Methylic Alcohol 1. Sometimes used in place of Chloroform.

Aqua Chloroformi, B. P..—1 in 200. *Dose*— $\frac{1}{2}$ to 1 ounce. As a wash or gargle for affections of the mouth and throat this has been found very valuable.—*L. Mar. 9, '89.*

Chloroformum Aconiti, B. P. C..—1 in $\frac{1}{2}$. An application for neuralgia.

Chloroformum Belladonnæ.—See page 53.

Chloroformum Camphoratum, B. P. C..—Camphor 2, Chloroform 1. Applied on cotton wool for toothache, and topically for rheumatism.

Chloroform and Mastic.—Used as a stopping for decayed teeth.

Linimentum Chloroformi, B. P.—1 in 2. A stimulating liniment.

Spiritus Chloroformi, B. P. ('Chloric Ether').—1 in 20. *Dose*—5 to 60 minims. Often added to mixtures to render them palatable.

Tinctura Chloroformi Composita, B. P.—1 in 10. *Dose*—5 to 60 minims.

Tinctura Chloroformi et Morphinæ, B. P.—Each 10 minim dose contains—Chloroform $\frac{1}{4}$ minim; Ether $\frac{1}{2}$ minim; Rectified Spirit 1½ minim; Morphine Hydrochlorate $\frac{1}{2}$ grain; Dilute Hydrocyanic Acid $\frac{1}{2}$ minim; Oil of Peppermint $\frac{1}{4}$ minim; with Liquorice, Syrup, and Treacle. Also known as **Liquor Chloroformi Compositus**. Intended to represent the patent medicine known as *Chlorodyne*. *Dose*—5 to 10 minims or more.

A very pure Chloroform has recently been prepared by a freezing process.

CINERARIA MARITIMA.

A plant cultivated almost everywhere. In Venezuela it has obtained a reputation as a cure for cataract, the leaf juice being used. A case is quoted in which a cure was effected in two months.—*Ph. J.* May 26, '88. Its use produces no irritation or inflammation, beyond a slight burning sense of pain which lasts for a minute or two.

Succus Cinerarie Maritimes.—The fresh expressed juice of the plant. 2 minims to be dropped into the eye, 8 times a day.

CINCHONÆ CORTEX, B. P.

Cinchona Bark.—The dried bark of *Cinchona Calisaya*, *C. officinalis*, *C. succirubra*, *C. lancifolia*, and other species of Cinchona, may all be used for the preparation of the Cinchona alkaloids. Some species of *Remijia* may also be used to obtain salts of quinine and cinchonine. The cultivated Red Bark from *C. succirubra* is alone official for making galenical preparations. *Cinchona Calisaya*, *C. succirubra*, and *C. officinalis* are cultivated in India, as also a number of hybrids, at the Government plantations at Darjeeling and on the Nilgiris. — *Pg. Ind.* ii. 181.

The following are the barks most generally met with :—

1. **Yellow or Calisaya Bark.**—In quills, formerly in flattened pieces, from *Cinchona Calisaya*, and var. *Ledgeriana*. The most valuable of all the varieties of bark.

2. **Crown Bark; Pale Bark; Loxa Bark.**—From *C. officinalis*. Occurs in quills. The original *Brunion Bark*. It is nearly as rich as Calisaya.

3. **Red Bark.**—From *C. succirubra*. In quills of a red colour. It is official for galenical preparations, but is not suitable for preparing quinine owing to the large proportion of cinchonidine it contains.

4. **Soft Bark; Columbian or Carthagena Bark.**—From *C. lancifolia* and *C. lucumifolia*. In quills or broken pieces, with whitish epidermis. These barks vary in the quantity and quality of their alkaloids.

5. **Pitayo Barks.**—From *C. Pitayensis*, in short curly pieces of a brownish colour. Rich in alkaloids, especially quinine and quinidine.

6. **Cuprea Bark.**—Yielded by species of *Remijia*. In short red quills and broken pieces. This is not a true Cinchona bark, but is included here as being a source of Cinchona alkaloids.

Cinchona Bark contains quinine, quinidine, cinchonine and cinchonidine, and isomeric modifications of these, also quinamine and uncry stallisable alkaloids. Some species also contain aricine, paricine, etc. Quinic acid, quinovin, cinchotannic acid, cinchona red, starch, etc., are also present.

Remijia Bark contains quinine, quinidine, cinchonine (no cinchonidine), and Cupreine, an alkaloid which exists in combination with quinine. This compound of quinine and cupreine was formerly taken for a distinct alkaloid and termed *Homo-quinine* or *Ultra-quinine*. Howard,

Sulphate of Cupreine is manufactured and sold.

A modification of cinchonidine, called *Homo-cinchonidine*, and also a modification of quinine containing two additional atoms of hydrogen, and known as *Hydroquinine*, have been found in some samples.

Cinchona officinalis and *C. Oalisaga* are the best yielders of quinine, but as *C. succirubra* has been found to be most easily propagated, and although it contains less quinine, yields a larger percentage of total alkaloids, it has been made official.

Cinchonæ Rubræ Cortex, B. P., Red Cinchona Bark. From cultivated plants of *Cinchona succirubra*. Ceylon and renewed bark do not answer to the *B. P.* description of this bark as regards external characters. Should yield between 5 and 6 per cent. of total alkaloids, of which not less than half should consist of quinine and cinchonidine.

Decoctum Cinchonæ, B. P.—1 in 16.
Dose—1 to 2 ounces.

Elixir Cinchonæ. *Dose*— $\frac{1}{2}$ to 1 drachm.

Extractum Cinchonæ Liquidum, B. P.—Standardised to contain 5 per cent. of total alkaloids. Has been recommended as a cure for dipsomania, great success being reported from its use. *B. M. J.* '80, i. 271. *Dose*—5 to 10 minims.

In the 1867 Pharmacopoeia this was made from yellow bark, and should always be styled **Extractum Cinchonæ Flavæ Liquidum**; it was an inferior preparation, and not miscible with water like the new Extract.

Infusum Cinchonæ Acidum, B. P.—1 in 20. *Dose*—1 to 2 ounces.

Mistura Ferri Aromatica, B. P. (Heberden's Ink.)—Contains Cinchona. *Dose*—1 to 2 ounces.

Tinctura Cinchonæ, B. P.—1 in 5. *Dose*— $\frac{1}{2}$ to 2 drachms.

Tinctura Cinchonæ Composita, B. P. (Huxham's Tincture.)—1 in 10. *Dose*— $\frac{1}{2}$ to 2 drachms.

Cinchonidinæ Sulphas.—See page 85.

Cinchonina.—See page 85.

Quinetum, Cinchona Febrifuge.—The mixed alkaloids from Red Cinchona Bark. A greyish white powder only slightly soluble in water, but easily dissolved with the aid of a dilute acid. It contains 50 to 70 per cent. cinchonidine. More readily absorbed into the system than the crystalline alkaloids, and is extensively used in India in place of quinine, being cheaper. *Dose*—1 to 5 grains or more.

Quineti Sulphas.—The sulphates of the above. In crystals like quinine, readily soluble in water containing a little dilute acid. Said to be more powerful in ague than quinine. *Dose*—1 to 5 grains: in ague 10 to 15 grains.

Quinoidina; Quinoidine; Chinoidin, U. S. P.—A mixture of amorphous alkaloids, obtained as a by-product in the manufacture of crystallisable Cinchona alkaloids. A brownish black mass, insoluble in water, but rendered soluble by the addition of dilute acid. Used as a cheap febrifuge, dissolved in solution of Boric or Sulphuric Acid, but its taste is very nauseous. *Dose*—1 to 5 grains, or more.

The result of an extended trial in India of the various Cinchona alkaloids is embodied in a report made by the commissions appointed in Bombay and Madras. Quinine is reported as most efficacious, Quinidine, Cinchonidine and Cinchonine follow in order. The relative doses are Quinine 3 grains, Quinidine 5 grains, and Cinchonidine and Cinchonine 7 grains, each.

Quinina. } See pages 243 & 244.
Quinidina. }

CINCHONIDINÆ SULPHAS, B. P.

Sulphate of Cinchonidine. ($C_{19}H_{22}N_2O_9 \cdot H_2SO_4 \cdot 6H_2O$).^{*}—Formerly called *Quinidine Sulphate* or *Chindin Sulphate*. In colourless, acicular, silky crystals, with a bitter taste; soluble 1 in 100 of water, more soluble in acidulated water, sparingly in chloroform and ether, 1 in 60 of rectified spirit. It is distinguished from Cinchonine by its solution being levogyrate, and from Quinine and true Quinidine by its acid solution not being fluorescent, nor giving an emerald green colour with chlorine water and ammonia.

Recommended to be used like quinine in intermittent fever. *Dose*—1 to 10 grains.

Cinchonidinæ Salicylas.—Recommended as a tonic and antiperiodic in neuralgia, rheumatism, sciatica, etc. *Dose*—5 grains every 2 hours.

CINCHONINA, B. P.

Cinchonine. $C_{19}H_{22}N_2O$ (see footnote).—An amorphous alkaloid obtained from Cinchona bark; insoluble in water. It is isomeric with Cinchonidine, but may be distinguished from the latter by the solutions of its salts being dextrogyrate, and from Quinine and

* This formula is from *Watt's Dictionary of Chemistry* (New Edition). The B. P. gives $(C_{20}H_{22}N_2O)_2 \cdot H_2SO_4 \cdot 3H_2O$.

Quinidine by its giving no green colour with chlorine water and ammonia. *Dose*—1 to 10 grains.

Being tasteless it has been recommended as a febrifuge for children in the form of

Pulvis Cinchoninæ Compositus.—1 in 5, with Bicarbonate of Sodium and Sugar of Milk. *Dose*—3 to 12 grains.—*M.*

Cinchoninæ Hydrochloras—Soluble in cold spirit. *Dose*—1 to 10 grains.

Cinchoninæ Sulphas, B. P.—In hard, colourless, short prismatic crystals, with a vitreous lustre, soluble in water, chloroform, spirit, and dilute acids, sparingly soluble in ether and solution of ammonia. It is cheaper than the other alkaloidal salts of Cinchona, and by some is held to be superior to quinine, but the taste is objectionable. *Dose*—1 to 10 grains.

Cinchonine Iodosulphate, a compound analogous to quinine iodosulphate (herapathite), and prepared from Cinchonine Sulphate and Iodine, has been recommended, under the name of *Antiseptol*, as a substitute for Iodoform. It is an odourless brown powder, insoluble in water, but soluble in alcohol and chloroform, and contains 50 per cent. of Iodine. *Ph. J.* Aug. 30, '90.

COCA, B. P.

Coca; Cuca; Erythroxylon, U. S. P.—

The dried leaves of *Erythroxylon Coca* (Erythroxylaceæ), cultivated in Bolivia and Peru, and other parts of South America. Coca has also been grown in some of the tea districts of India with considerable success.—*Ph. J.* June 22, '88, *et seq.* The leaves are green or brownish, odour tea-like, taste somewhat bitter and aromatic. The physiological action of Coca is due to the alkaloid **Cocaine** (see page 88); and is analogous to that of tea or coffee, but more powerful. It is used to a

large extent by the natives of South America, who chew the fresh leaves for the purpose of appeasing or warding off hunger, thirst, and fatigue, a property which they possess in a marked degree. The therapeutic applications of Coca may be summed up thus:

1. As a stimulant for extra physical or mental work.
2. In gastric indigestion.
3. In the cachexie.
4. Against the effects of alcohol or morphine.
5. In asthma.
6. As an aphrodisiac.
7. As a local anesthetic.

The freshly dried leaves are said to be most active.

Dose—½ to 2 drachms, chewed or in infusion.

Elixir Erythroxyl et Guaranae.

See page 137.

Extractum Cocæ Liquidum, B. P.

Extractum Erythroxyl Fluidum, U. S. P.—Not miscible with water unless freed from wax. A very convenient preparation, one fluid ounce representing one ounce of the leaves. Has been found to check hemorrhage from the bowel when given internally. *Dose*—½ to 2 drachms.

Extractum Cocæ (Solid). *Dose*—2 to 15 grains.

Infusum Cocæ 1 in 50. As a gargle in tonsillitis.

Pastils of Coca. *Dose*—One every 2 or 3 hours.—See page 129.

Vinum Cocæ, Coca Wine. An agreeable form of administering the drug as a stimulant. It also checks the vomiting caused by irritable stomach, and relieves the pain of gastralgia. *Dose*—½ to 2 ounces.

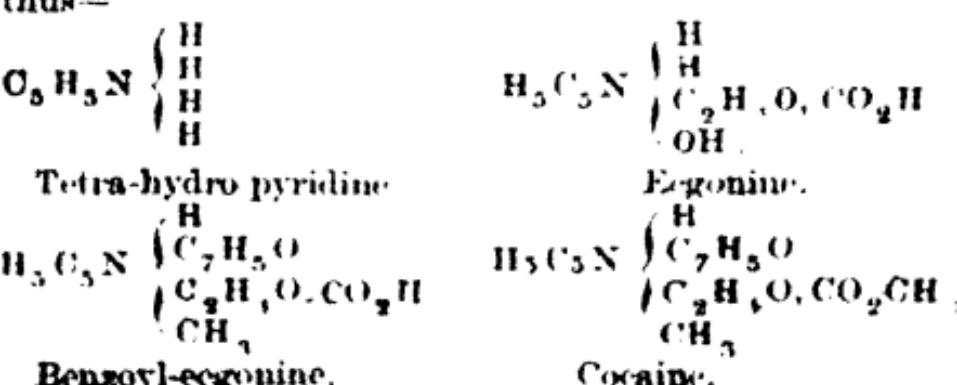
A Cordial and an Elixir are also prepared, similar to Coca Wine, but of less alcoholic strength.

COCAINA.

Cocaine ; Benzoyl-methyl-econine.*
 $C_17H_{21}NO_4$.—An alkaloid obtained from Coca, of which it is the active principle, by treating with alcohol, precipitating the colouring matter with lime, and the alkaloid with carbonate of potassium, removing the latter with ether, and decolorising with animal charcoal. It was first isolated by Niemann in 1860. Most of the Cocaine now met with is separated in a crude form in South America, and purified or converted into Hydrochlorate in Europe. It occurs in colourless prisms, almost insoluble in water, but freely soluble in ether, chloroform, and oils. It produces anesthesia on mucous membranes with which it comes in contact.

Coca leaves may contain as much as 0·45 to 0·50 per cent. of Cocaine, but the yield varies greatly. In addition to Cocaine, a volatile alkaloid, Hygrine, is said to be present in the leaves, together with Cocamine, Cocaidine, and Econine (a derivative of Cocaine). Hygrine is supposed by some to be a mixture of oxygenated bases. An amorphous Cocaine has also been found in the leaves, which is supposed by some to be simply a solution of Cocaine in Hygrine.—*Ph. J.*, xvii. 861, 1039, 1049, 1068; xviii. 71, 437, 701; xix. 245, 863, 866. Econine may be also obtained, together with benzoic acid and methyl alcohol, by heating Cocaine with hydrochloric

* Cocaine is now considered to be a substitution product of the aromatic base, *Paridine* (C_7H_5N), found in bone oil, thus—



See also *Pyridine*, page 242.

Cocaine is chemically related to Atropine.—*Ph. J.*, June 28, '90.

acid. Cocaine has been prepared synthetically from Eegonine by treatment with benzoic acid and the introduction of a methyl group, forming *Benzoyl-methyl-eegonine* or Cocaine.—*Ph. J.* Dec. 29, '88. This is made use of now in manufacturing the alkaloid from the leaves, the other bases being converted into Cocaine, and the yield of the latter thus increased.—*K. Jan. '90.*

When the anaesthetic properties of Cocaine are required for external application in an oily menstrum, the pure alkaloid, which is soluble in oils, must be used, and not the salts, which are insoluble. The following preparations will be found convenient.

Ceratum Cocainæ.—1 in 30. For burns, pruritus, etc.

Emplastrum Cocainæ.—2 per cent. for application in neuralgia, sciatica, tender corns, etc.

Oleatum Cocainæ.—1 to 2. See p. 199.

Oleum cum Cocaina.—2 per cent. in Almond or Castor Oil. The former is suitable for the ear, the latter for the eye, or for smearing catheters. Also combined with **Homatropine**, see page 50.

Suppositories, Pessaries, and Bougies contain $\frac{1}{2}$ grain or more each.

Obstetric Cones, containing Cocaine, Boric Acid, and Cacao Butter, are also prepared. They are hollow, being intended to fit the index finger, to be used in lubricating the *os uteri*.

Tablets, $\frac{1}{20}$ grain each, with Chocolate, are also sold. They are useful for sea sickness, vomiting of pregnancy, etc.

Unguentum Cocainæ.—1 in 30, with Lanolin.

Vaselineum Cocainæ.—1 in 30, with Vaseline.

Salts of Cocaine.—

Cocainæ Citras, Citrate of Cocaine. In very hygroscopic crystals. Used by dentists.
Dose— $\frac{1}{50}$ to 1 grain.

Cocainæ Hydrobromas, Hydrobromate of Cocaine. In small crystals. *Dose*— $\frac{1}{50}$ to 1 grain.

Cocainæ Hydrochloras. $C_{17}H_{21}NO_4 \cdot HCl$.—The Hydrochlorate is the salt in most common use. It occurs in colourless acicular crystals, or crystalline powder, freely soluble in water, alcohol, and glycerine, insoluble in ether and fixed oils. Taste somewhat bitter, producing a tingling sensation followed by numbness. Its aqueous solution dilates the pupil of the eye. Hydrochlorate of Cocaine is also to be had in crystals containing 10 per cent. of water, but the anhydrous salt is official.

Tests.—It dissolves in cold sulphuric acid without the formation of any colour—but with effervescence owing to the escape of hydrochloric acid gas,—and chars when heated with this acid. It leaves no residue on ignition. It gives a yellow precipitate with chloride of gold, a white precipitate with carbonate of ammonia, soluble in excess, and a white precipitate of pure Cocaine with solution of ammonia, insoluble in excess, but re-dissolving after some time owing to its conversion into benzoyl-econine. If 2 drops of a 1 per cent. solution of permanganate of potassium be added to 1 grain dissolved in 1 drachm of water the red colour should remain for at least one hour if the sample be pure.

Dose— $\frac{1}{50}$ to 1 grain.

Hydrochlorate of Cocaine is very extensively used, especially in minor surgery, as a local anaesthetic. It is particularly adapted for producing anaesthesia in operations on the eye and throat.

In minor surgical operations it may be injected as a 10 to 20 per cent. solution in quantity equal to 1 to 4 grains of the salt. For the eye a 4 per cent. solution is preferable.

Lamellæ Cocainæ, B. P. Gelatine discs containing each $\frac{1}{60}$ grain Hydrochlorate of Cocaine. Used in ophthalmic surgery.

It is used for allaying hoarseness or irritation of the throat, and for this purpose is given in the form of **Tablets, Pastils, or Lozenges.** (See page 92.)

It also, like Coca, acts as a stomachic and nerve stimulant. In *sea sickness*, $\frac{1}{4}$ grain every hour or oftener is a good remedy, often completely preventing the malady if taken regularly from the commencement of the voyage.*

Other applications of Cocaine are so numerous that a mere reference must suffice.

Hydrophobia 4 per cent. solution injected into the back.

Moles and Warts 6 grains in 1 drachm Nitric Acid, carefully applied with a glass rod.

Coryza 1 per cent. solution applied to the nostrils.

Gonorrhœa 2 per cent. solution, injected, relieves the pain.

Earache 2 per cent. solution in the ear.

Toothache Camphor 5, Chloral 5, Cocaine Hydrochlorate 1. (See also page 77.)

Also recommended in dentistry, for burns, morphinism, alcoholism, diabetes, etc.

Injectio Cocainæ Hydrochloratis, Hypodermica. 1 grain in 20 minimis. For sciatica and local affections. Highly recommended for scorpion-bites, having been used in nearly 100 cases, without one failure, or any ill effects.—*M. R.* Sept. '90.

* As the action of Cocaine is only temporary, and as its efficacy in sea sickness depends on its anaesthetic action on the nerves, small and frequently repeated doses are much more satisfactory in their results than large and occasional doses.

Hypodermic Tablets are made containing $\frac{1}{2}$ and $\frac{1}{3}$ grain each. The $\frac{1}{2}$ grain Tablet may be placed in the hollow of an aching tooth to relieve the pain.

Liquor Cocainæ Hydrochloratis, B. P. (Ad.).—10 per cent. with $\frac{1}{2}$ grain Salicylic Acid in 6 fluid drachms: dissolved in water which has been previously sterilised by boiling. *Dose*—2 to 10 minims.

Pastillus Cocainæ Hydrochloratis.— $\frac{1}{2}$ grain; and with **Morphia** $\frac{1}{10}$ grain. (See also page 129.) These and the **Lozenges** ($\frac{1}{2}$ grain) are useful for invigorating the vocal organs.

Cocainæ Saccharis. Saccharite of Cocaine. A combination of Cocaine and Saccharin, recommended as a throat application for children: being sweet it is easily applied. It is a white, amorphous, deliquescent salt, soluble in water. —*B. M. J.* Mar. 10, '88; *Ph. J.* Mar. 31, '88. *Dose*— $\frac{1}{2}$ to 1 grain.

Cocainæ Salicylas.—In minute crystals, slightly deliquescent. Its solution keeps well. *Dose*— $\frac{1}{2}$ to 1 grain. Recommended for hypodermic injection in spasmotic asthma.

Phenol-cocaine: Cocaine Phenol. A combination of Cocaine and Carbolic Acid. A mass of the consistency of honey, soluble in alcohol. Chiefly employed as a local anaesthetic in dentistry, but has also been given internally for catarrh of the stomach, and externally as a 1 per cent. solution for pains. *Dose*— $\frac{1}{2}$ to 2 grains.

Chloroform and Cocaine Anæsthesia.—This consists in administering Chloroform in the usual manner, and simultaneously injecting Cocaine near the part to be operated on. The two drugs being antagonistic to one another, there need be no fear of an overdose of either. After the injection no more Chloroform need be given unless the operation is a long one. In a case of amputation of the thigh, 2 drachms of

Chloroform were inhaled and one grain of Cocaine injected at the commencement. Two drachms more Chloroform were required towards the close of the operation, which lasted 20 minutes, there being no vomiting on recovering consciousness. This treatment possesses the following advantages:—

1. The combined benefits of Cocaine and Chloroform.
2. The almost invariable absence of vomiting on recovering consciousness.
3. The greater facility with which consciousness is attained, and the absence of general sickness.—*Ed. M. J.* Dec. '88

Cocaine is poisonous in an over-dose. *Antidotes.* The use of Nitrite of Amyl is recommended for relieving the cerebral anæmia, and that of Bromide of Potassium and the application of cold for the convulsions which appear to be the main cause of death in fatal cases.—*E. R.* '87.

Solutions containing Cocaine appear in many cases to grow fungi after keeping a short time. Many remedies have been recommended, as salicylic acid, thymol, boric acid, perchloride of mercury, camphor, chloroform, etc. Boric acid does not efficiently prevent fungi, perchloride of mercury forms a double salt, and the others are too irritating for use as eye solutions. The best proceeding is to use *pure* Cocaine Hydrochlorate (see page 90), sterilise the water by boiling before use, and preserve the solution in a clean stoppered bottle. Brushes, etc., should not be dipped into the bottle.—*M. R.* The *B. P. (Ad.)* orders 1 grain of Salicylic Acid in 720 minimis of 10 per cent. solution. (See page 92.)

Cocaine Hydrochlorate is incompatible with borax, the latter being alkaline in dilute solutions and precipitating the alkaloid. A little boric acid should be added to keep the solution clear.—*M. R.* Aug. '90.

CODEINA, B.P.

Codeine; **Codeia**; **Methyl-morphine**.
 $C_17H_{21}NO\ H_2O$.—An alkaloid of Opium. In colourless or nearly colourless crystals, soluble 1 in 80 of water, very soluble in alcohol, dilute acids, and excess of liquid ammonia. Taste slightly bitter. It is prepared from Opium; and also synthetically from Morphine, by treating the latter with caustic soda and chloride or iodide of methyl.

Codeine is a useful sedative in phthisical cough, and in larger doses acts as a hypnotic. In diabetes it lessens the amount of sugar in the urine.

Dose—½ to 2 grains.

Codeinæ Phosphas.—Being freely soluble in water, this salt is most suitable for hypodermic injection 1 grain in 6 minims. It produces no local irritation. Contains 70 per cent. alkaloid, and is soluble in 4 parts of water.
Dose—½ to 2 grains.

Hypodermic Tablets contain ½ grain each.

Codeine and Glycerine Jelly.—A convenient and elegant method of administering Codeine. *Dose*—1 drachm.

Lozenges contain ½ grain each.

Pastils of Codeine.—½ grain each. For cough. (See page 129.)

Pilula Codeinæ Composita.—Codeine ½ grain, Extract of Nux Vomica ½ grain, Extract of Lettuce ½ grain. For one pill. To be taken 3 times a day for diabetes.

Syrupus Codeinæ, B.P.C..—1 grain in 1 ounce. *Dose*—½ to 2 drachms.

COLCHICINA.

Colchicine. $C_{22}H_{25}NO_6$.—The active principle of the Meadow Saffron, *Colchicum autumnale*. A yellowish-white powder which

darkens by exposure to light, soluble in water and alcohol, insoluble in ether. It acts as a diuretic and purgative, and is given in gout, rheumatism, and neuralgia. Being a cumulative poison it must be used with caution.

Dose— $\frac{1}{32}$ to $\frac{1}{16}$ grain in pill; $\frac{1}{32}$ grain hypodermically.

Hypodermic Tablets contain $\frac{1}{100}$ grain each.

Colchicine is the methyl ether of colchicin, and on boiling with a dilute mineral acid yields **Colchicein** or Trimethyl-acetyl-colchicinic Acid ($C_{21}H_{25}NO_6$) which is a powerful poison, paralysing the brain and spinal cord.

Antidotes.—Opium, Tannin.

COLLINSONIA.

Stone-Root.—The root of *Collinsonia canadensis*, an American plant. Has been recommended for gravel and other urinary affections. It appears to exert an alterative influence on the mucous tissues, and has been used in relaxed conditions of the throat and vocal organs.

Tinctura Collinsoniae. 1 in 10. *Dose*— $\frac{1}{2}$ to 2 drachms.

Extractum Collinsoniae Liquidum.—Miscible with water. *Dose*—15 to 60 minims.

COLLODIUM, B. P.

Collodion; Contractile Collodion.—Pyroxylin (1) dissolved in a mixture of spirit and ether (48). A colourless, viscous liquid, which dries on exposure to the air, leaving a thin film.

Collodium Flexile, B. P., Flexile Collodion.—The above with the addition of Canada Balsam and Castor Oil. Does not contract on drying.

Collodium Vesicans, B. P., Blistering Collodion.—Blistering Liquid (Liq. Epispasticus) containing Pyroxylin, 1 in 20. A less viscous preparation, containing Pyroxylin, 1 in 40, has

been recommended : as well as a stronger vesicant prepared from a Liq. Epispasticus containing 8 oz. Cantharides in one pint, instead of 5 oz. (B.P.)

The various kinds of nitro-cellulose used for preparing Collodions are as follows :—

Pyroxylin, B. P. Gun-cotton ; Gossypium Fulminans ; Colloxylinum.—Tetra-and Tri-nitro-cellulose. Prepared by treating cotton wool with a mixture of Nitric and Sulphuric Acids.

Colloidin.—The above purified by solution in alcohol and ether. It is sold in cakes, and is used for embedding histological specimens previous to cutting sections.

Photoxylin.—Di-nitro-cellulose. Prepared by nitrating wood wool. Dissolved in a mixture of alcohol and ether it resembles collodion, but is said to leave a much tougher film. It is used to form artificial tympana.

The following preparations are made from Collodion : those mentioned under other heads may be found by reference to the Index.

Anodyne Amyl Colloid.—See page 20.

Hæmostatic Collodion. (Dr. Pavesi's).—

Contains Carbolic Acid 10, Tannic Acid 5, Benzoic Acid 5, in 100 parts Collodion. Applied by means of a brush, or on pieces of linen.

Styptic Colloid (Dr. Richardson's).—A combination of Collodion and Tannic Acid, useful for abrasions, fetid wounds, and for arresting haemorrhage. Also in veterinary practice. Applied with a brush, or mixed with an equal quantity of Ether and used as a spray.

CONDURANGO.

The bark of *Gonolobus Condurango* (Asclepiadaceæ), from Peru. It contains a glucoside, *Condurangin*, which acts as a nerve poison. Used as an alternative in chronic syphilis, also in cancerous diseases, for which it is said to be a specific.

Dose—30 to 60 grains.

Tinctura Condurango.—*Dose*—1 to 2 drachms.

Extractum Condurango Liquidum.—*Dose*—30 to 60 minims.

Vinum Condurango.—*Dose*— $\frac{1}{2}$ to 2 ounces.

CONINA.

Conine ; Cicutine ; Conicine. C₈H₁₁N.—A volatile liquid alkaloid obtained from Hemlock, *Conium maculatum* (Umbelliferæ). It has a characteristic odour resembling mice, and is slightly soluble in water. Conine is dextro-*a*-propyl-piperidine, and has been prepared synthetically from *a*-picoline.

Conine acts as a direct sedative to the respiratory centres, and is useful in neurosis and spasmodyc affections of chronic bronchitis. It is very suitable in acute mania without organic brain disease, and epilepsy. In neuralgia it is recommended to be given commencing with 1½ grain of the Hydrobromate, but not exceeding 4½ grains, per 24 hours.

Dose— $\frac{1}{2}$ grain, carefully increased to 2 grains.

Commercial Conine contains conhydrine and methyl-conine, and is not stable. The following salt is free from these impurities and more stable.

Coninæ Hydrobromas.—In colourless crystals, freely soluble in water. *Dose*— $\frac{1}{2}$ grain increased to 2 grains.

Injectio Coninæ Hydrobromatis Hypodermica.—1 grain in 20 minims. *Dose*—1 to 3 minims.

Pessaries contain $\frac{1}{2}$ minim Conine (alkaloid) each, with gelatine; **Pills** $\frac{1}{2}$ grain Hydrobromate in each.

Unguentum Conii, B.P. (Ad.).—2 ounces of Hemlock Juice are to be evaporated to 2 drachms, and mixed with 6 drachms of Lanolin and 10 grains of Boric Acid. For painful affections of the rectum and anus, as pruritus ani, piles, etc.—*Pr. Apr. '88.*

Vapor Coninæ, B. P.—*Succus Conii* (1 ounce) is to be mixed with Solution of Potash (1 drachm) and water (1 ounce), and 20 minims of the mixture put on a sponge, in a suitable apparatus, so that the vapour of hot water passing over it may be inhaled. The alkali liberates the alkaloid from the Hemlock Juice.

The use of Conine must be accompanied with great caution, owing to its paralysing effect on the respiratory muscles.

Antidotes.—Emetics, followed by external and internal stimulants, and artificial respiration.

CONVALLARIA.

Lily of the Valley.—The entire plant of *Convallaria majalis* (Liliaceæ). Has long been used by the peasantry in Russia as a remedy for dropsy. Useful in functional and organic disease of the heart, especially in Corrigan's disease, and in dilatation of the heart with or without hypertrophy. It is a powerful diuretic. Also recommended in chronic pericarditis, anaemia, and diabetes.

Convallaria contains two glucosides, *Convallarin* and *Convallamarin*, as well as a principle contained in the flowers only.

Extractum Convallariæ (Solid).—From the entire plant, one-third being roots and leaves. *Dose*—2 to 8 grains.

Extractum Convallariæ Liquidum.—From the flowers. *Dose*—2 to 10 minims.

Tinctura Convallariæ, B. P. C.—1 (flowers) in 8. *Dose*—5 to 20 minims.

Convallarin.—A pale brown glucoside obtained from Convallaria. Soluble in alcohol, insoluble in water. Acts only as a purgative. *Dose*—3 or 4 grains.

Convallamarin ($C_{12}H_{20}O_8$).—Another glucoside obtained from the same source. Soluble in water and alcohol. Much more active than the preceding, and said to contain the active

properties of the drug. It acts on the heart more slowly than Digitalis, but its effects are more persistent. *Dose*— $\frac{1}{2}$ to 2 grains.

COTO.

Coto Bark.—The bark of a species of *Neetandra*, imported from Bolivia. Two varieties of bark are met with, named respectively **Coto** and **Paracoto**,* having similar therapeutic properties. Recommended for cholera, diarrhoea, dysentery, gout, and rheumatism.

Dose—1 to 8 grains, in powder.

Extractum Coto Liquidum.—Not miscible with water. *Dose*—2 to 6 minims.

Tinctura Coto, B. P. C.—1 in 10. *Dose*—10 minims every 2 hours in diarrhoea.

Cotoin. $C_{22}H_{14}O_4$.—A neutral principle which exists in Coto Bark along with *Dicotoin*. A pale yellow amorphous or crystalline powder, slightly soluble in water, freely in ether, chloroform, alcohol, and alkalies. It checks salivation and night sweats. Hypodermically, 15 minims of a 1 in 4 solution in Acetic Ether, injected every quarter of an hour to every hour, has a specific action on the bowels in cholera. *Dose*— $\frac{1}{2}$ to 2 grains.

Paracotoin. $C_{19}H_{12}O_4$.—A neutral principle found in Paracoto Bark, along with *Hydrocotone* and several others. It is in small laminar crystals, soluble in ether and chloroform, slightly so in water. Its action is similar to Cotoin but much weaker. *Dose*—1 $\frac{1}{2}$ to 3 grains.

COUMARINUM.

Coumarin. $C_{10}H_8O_2$.—A neutral crystalline principle occurring in Tonka beans (*Coumarum odorata*) between the seed coating and the kernel; found also in woodruff, *Asperula odorata*, in *Anagreum fragrans*, *Melilotus offic-*

* Paracoto is the commercial 'Coto Bark' in America.

nalis, etc.* It is now manufactured synthetically from Salicylic Aldehyde. It has an agreeable aromatic odour, on account of which it is used to disguise the odour of Iodoform,—two per cent. of Coumarin being sufficient for that purpose.

CREASOTUM, B.P.

Creasote ; Creosote ; Kreosote.—A mixture of substances of a phenolic character, chiefly creosol and guaiacol, obtained from wood tar by distillation. A colourless, or yellowish liquid, with a peculiar odour. Very slightly soluble in water, freely soluble in alcohol, ether, and glacial acetic acid. Genuine Creasote is met with in two forms—Hydrated Creasote, which does not become coloured by keeping, but makes a cloudy mixture with oil of turpentine, and Anhydrous Creasote, which mixes perfectly with turpentine but is liable to turn brown.

Creasote preserves animal substances from decay, hence its name (*κρέας σώζειν*). Externally it acts as a caustic, astringent, antiseptic, and styptic: internally as a narcotic, also for sickness, phthisis, cholera, and diabetes. As an inhalation it is very valuable in congestion of the larynx and trachea, and in ozæna, etc.

Dose—1 to 3 minims.

Mistura Creasoti, B.P.—Contains about 1 minim in one fluid ounce, the taste being concealed by Juniper. *Dose*—1 to 2 ounces.

The following mixture has been recommended for phthisis:

Creasote	... . . . .	3 drachms.
Tincture of Capsicum.		3 drachms.
Mucilage	... . . . .	$\frac{1}{2}$ ounce.
Water to	... . . . .	4 ounces.

Mix. *Dose*—A teaspoonful, well diluted, after meals.

In diabetes, 4 drops *per diem*, gradually increased to 10 drops, causes ultimate disappearance

* For a complete list of the plants in which Coumarin has been detected, see *Ph. J.* Apr. 30, '89.

anti-arthritis tonic and for tonsillitis. A good application to foul wounds with a tendency to bleeding. *Dose*—3 to 10 grains, in pills.

Ferri Succinæ, Succinate of Iron.—An amorphous red brown powder, insoluble in water or alcohol. Given with chloroform in the treatment of gall-stones.—*Ph. Rec.* Apr. 7, '00. *Dose*—1 to 5 grains.

Ferri Sulphas, B. P., Ferrous Sulphate, $\text{Fe SO}_4 \cdot 7\text{H}_2\text{O}$; and

Ferri Sulphas Granulata, B. P.—*Dose of each*—1 to 5 grains.

Ferri Sulphas Exsiccata, B. P., Dried Sulphate of Iron, $\text{Fe SO}_4 \cdot \text{H}_2\text{O}$. *Dose*— $\frac{1}{2}$ to 3 grains.

Ferri et Ammonii Sulphas, U. S. P.; Ammonio-Ferric Alum; Iron Alum; Ferro-Alumen. $\text{Fe}_2(\text{NH}_4)_2(\text{SO}_4)_4 \cdot 24\text{H}_2\text{O}$.—Pale violet octahedral crystals, efflorescent, having an acid styptic taste, and a slightly acid reaction. Soluble 1 in 3 of water, insoluble in alcohol. Used internally to arrest haemorrhage from the kidneys. 8 grains to 1 ounce forms a good astringent gargle. *Dose*—3 to 10 grains.

Ferri et Magnesii Sulphas.—See page 304.

Ferrum Tartaratum, B. P., Tartarated Iron; Potassio-Ferric Tartrate.—Thin transparent scales of a deep garnet colour, soluble in water, but sparingly in spirit. *Dose*—5 to 10 grains.

Ferri et Ammonii Tartras, U. S. P., Ammonio-Ferric Tartrate. is a somewhat similar salt.

Ferri Valerianas, U. S. P., Ferric Valerianate.—A dark red amorphous powder, insoluble in cold water, readily soluble in alcohol, decomposed by boiling water into Ferric Hydrate and Valerianic Acid. *Dose*—1 to 5 grains.

Salts of Iron are incompatible with vegetable astringents, alkalies, alkaline carbonates, and all infusions, etc., containing tannin.

FUCHSINE.—See page 36.

FUCUS VESICULOSUS.

Bladder Wrack ; Sea Wrack.—The dried plant of *Fucus vesiculosus* (Algae), a common sea-weed. Being rich in iodine it has long been used for glandular swellings and obesity, chiefly the latter, the preparation sold as 'Anti-Fat' being said to be a fluid extract of this drug. A number of cases are reported in which preparations of this drug have proved efficacious, as well as a few in which it did not seem to have much effect. It does not produce dyspepsia or diarrhoea.

Extractum Fuci Vesiculosi.—*Dose*—3 to 8 grains.

Extractum Fuci Vesiculosi Liquidum.—Miscible with water. *Dose*—½ to 2 drachms 3 times a day, before meals.

GARCINIAE OLEUM, P.I.

Oil of Garcinia ; Kokum Butter.—The oil from the seeds of *Garcinia indica* (*Garcinia purpurea*), Guttiferae, a tree common on the Western coast of India, and on the hills of the Concan. The oil is obtained by bruising and boiling the seeds in water; the oil separates on cooling, and is re-melted and filtered to free it from impurities. The seeds yield about 10 per cent. of oil.

A pale yellowish-white concrete oil, melting at 98° F. (body temperature), friable, and greasy to the touch. It consists chiefly of *Tristearin*. Useful as an application for ulcers and chapped hands, and also as a basis for ointments for use in hot climates, and for suppositories, its melting point being specially in favour of its use for the latter purpose.

**GAULTHERIAE OLEUM,
U.S.P.**

Oil of Wintergreen.—A volatile oil distilled from the leaves of Wintergreen, *Gaultheria procumbens* (Ericaceæ). A colourless, yellow, or reddish liquid, soluble in alcohol. It consists of Methyl Salicylate with a small quantity of a terpene. Commercial Gaultheria Oil is mostly oil of Birch (*Betula lenta*), which consists entirely of Methyl Salicylate, or a mixture of oils of Birch and Wintergreen, although pure Gaultheria Oil is obtainable.—*Sq.*

Possesses properties similar to Salicylic Acid, being valuable in acute rheumatism and sciatica. Externally it has been used for eczematous eruptions and sores, especially in the ears and other delicate parts. Also employed as a flavouring agent, especially in dentifrices.

Dose—10 to 15 minims.

Capsules contain 10 minims each.

Spiritus Gaultheriae. U. S. P.—3 per cent.

Unguentum Gaultheriae.—For external application.

GAUZES, MEDICATED.

Since the introduction of the antiseptic system of surgery, Medicated Gauzes have been on the increase, and Gauzes are now prepared containing a definite percentage of nearly every antiseptic in common use (see INDEX). Most Gauzes are tinted with some colouring material, as aniline blue, magenta, haematoxylin, etc., partly for purposes of ready identification, but principally as a proof that the material has been evenly medicated, the colour being first mixed with the antiseptic.

Gauzes, to be readily absorbent, should be free from the acid and fatty substances which are usually present in the raw material (for this

reason Gauzes prepared with wax and resin are of little use as absorbents), should contain at least 30 threads each way per square inch, and should weigh before medication at least 10 drachms per square yard.—*Ph. J.* Dec. 21, '89; *H.* July '90.

Under the name of **Telæ**, the Dutch Pharmacopœia of 1889 orders Medicated Gauzes, the raw material of which should take up water easily and sink therein, and should weigh not more than 100 grammes (about 3 ounces) for 2 square metres (80 by 40 inches). In spite of the first precaution, however, the Gauzes are ordered to be medicated with paraffin as a basis.

Gauze and Cotton Wool Tissue (Gamgee's Tissue) consists of a thin sheet of absorbent cotton wool between two layers of Gauze. It may be had plain or medicated.

For a full list of Medicated Gauzes, see INDEX.

GELATINUM, B.P. (Ad.)

Gelatine.—This is now official. It is prepared from 'gelatigenous animal tissues,' and is required to give a colourless and odourless solution with hot water. Its official use is for making Glycerine Suppositories. (See page 132.) It is also largely used for coating pills (see page 311), and very largely in the arts.

Glycerine Jelly.—A preparation for the hands, consisting of Gelatine, Glycerine, and Rose Water. A firmer jelly is made for putting up microscopic specimens.

Gelatine Mass, for Pessaries and Suppositories, consists of Gelatine with water and Glycerine, 1 of Gelatine in 6 by weight.

Gelato-Glycerine.—A similar but firmer preparation (1 in 3), used as a base for nasal and urethral bougies. It is also firmer than the following:

Glyco-Gelatine.—A mass similar to the two preceding, but of a consistency better suited

to the purposes for which it is required. It is flavoured with orange and tinted with carmine, and is used as a basis for

Pastilli. Pastils.—These are specially adapted for throat and mouth medication, their gelatinous nature and pleasant taste making them very agreeable; while the simplicity of their composition allows of any formula being prepared on short notice. The following formulæ have been recommended, those in italics being official in the *Throat Hospital Pharmacopœia* :—

Acid. Boracic, gr. 2.

Acid. Carbolic, gr. $\frac{1}{2}$. See page 8.

Ammon. Chlor., gr. 2.

Bismuth. Carb., gr. 3

{ *Bismuth. Carb.*, gr. 3 } See page 57.

{ *Morph. Acet.*, gr. $\frac{1}{2}$

{ *Bismuth. Carb.*, gr. 3.

{ *Potas. Chlor.*, gr. 2.

Cocæ Extracti, gr. $2\frac{1}{2}$. See page 87.

Cocaine Hydrochlor., gr. $\frac{1}{20}$. See page 92.

{ *Cocain.*, gr. $\frac{1}{20}$ } See page 92.

{ *Morph.*, gr. $\frac{1}{20}$ } See page 92.

Codeine, gr. $\frac{1}{2}$. See page 94.

Iodoform, gr. 1. See page 162.

Morphinae Acetat., gr. $\frac{1}{20}$. See page 189.

Potassii Chloratis, gr. 2.

Thymol, gr. $\frac{1}{2}$. See page 290.

Gelatum Zincii—A preparation of Gelatine, Glycerine, and Zinc Oxide. Used as an application to eczematous surfaces, being melted and applied with brush. It may also be used as a basis for other medicaments, as Iodotorm, Chrysarobin, Carbolic Acid, Salicylic Acid, Regorein, or Naphthol, 10 per cent.; fats, balsams, tars, and Ichthyol, 10 to 20 per cent.; Corrosive Sublimate, 3 per cent.; Extract of Cannabis Indica, 2 to 5 per cent., etc. It is incompatible with tanin, pyrogallol, and oxide of mercury.—*Ph. J.* Apr. 6, '90.

Gelatine Capsules.—An elegant method of administering nauseous powders and liquids. They consist of two tubes of Gelatine, close at

one end, and telescoping into one another, and are made in various sizes and styles to suit the nature of the medicament. Ordinary capsules for oral exhibition are made in a number of sizes from 5 grains upwards; rectal capsules are pointed at one end and made in 3 sizes; horse capsules are larger and in 3 sizes ($\frac{1}{2}$, $\frac{1}{4}$, and 1 ounce). **Elastic Capsules** are sent out ready filled; they contain some Glycerine and are soft and pliable, being particularly suited for such drugs as castor oil, the large dose of which renders a hard capsule unmanageable.

GELSEMIUM, B. P.

Gelsemium; Yellow Jasmine.—The dried rhizome and rootlets of *Gelsemium nitidum* (*G. sempervirens*), Loganiace, United States, very valuable in neuralgia and toothache, also said to be an antiperiodic in fever. Useful also in convulsive or spasmodic cough. Internally it contracts the pupil, locally it dilates the pupil. Contra-indicated where cardiac action is weak.

A powerful paralyser and respiratory poison.
—*Ring.*

Antidotes.—Emetics; stimulants; Morphine; Atropine.

Gelsemium is an antidote to strychnine. It contains two alkaloids, *Gelsemine* (see below) and *Gelsemine*, also *Gelsemic Acid*.

Extractum Gelsemii Fluidum, U. S. P.—Not miscible with water. **Dose**—1 to 10 minimis.

Tinctura Gelsemii, B. P.—1 in 8. Pale brown with a fluorescent surface. **Dose**—5 to 30 minimis, alone or with a Bromide.

Gelsemina, Gelsemine.—The active principle. A pale yellow crystalline powder, sparingly soluble in water. **Dose**— $\frac{1}{50}$ to $\frac{1}{40}$ grain.

Amorphous Gelsemine is a mixture of two alkaloids.

Gelseminee **Hydrochloras.**—Freely soluble in water. *Dose*— $\frac{1}{6}$ to $\frac{1}{3}$ grain.

Liquor Gelseminæ Hydrochloratis.—1 grain in 1 drachm. *Dose*—1 to 3 minims, hypodermically, in facial neuralgia. Also used to dilate the pupil for ophthalmoscopic examination, its action being less prolonged than that of Atropine, and consequently more convenient.

Gelsemin.—The powdered alcoholic extractive of the root. Must not be confounded with *Gelsemine*, the alkaloid. *Dose*— $\frac{1}{2}$ to 2 grains.

Extractum Gelsemii Alcoholicum, B. P.—An alcoholic extract of the drug, intended to represent Gelsemiu.

GLONOINUM.—See page 197.

GLUSIDUM.—See page 254.

GLYCERINUM, B. P.

Glycerine; Glyceiol. $C_3H_{7}(HO)_3$.—A sweet principle obtained from fats and oils by saponification or superheated steam. Used externally as an application in various skin diseases; internally it relieves cough, and as an anal injection is given for constipation, which it relieves very rapidly. From $\frac{1}{2}$ to 2 drachms, either plain or slightly diluted, injected by means of a suitable syringe, acts very well.—*L.* 88, I. 38. A piece of cotton wool, well saturated with Glycerine, is equally efficacious.—*B. M. J.* Dec. 22, '88. An ordinary syringe with a catheter attached allows the enema to be passed 6 or more inches up the rectum, causing a more certain and immediate evacuation.—*Pr. Apr. '89.* In infantile diarrhoea an injection of 2 drachms has been found very valuable.—*Pr. Dec. '88.*

Dose—10 minims to 2 drachms.

Suppositoria Glycerini, B. P. (Ad.)—Consist of Gelatine, Glycerine, and water, containing 70 per cent. by weight of Glycerine. They are made 30, 60, and 120 grain-measures each. For use in place of the enema.

Official Preparations—

Glycerinum Acidi Carbolici	1 to 4.	See p. 8.
Glycerinum Acidi Gallici	1 to 4.	
Glycerinum Acidi Tannici	1 to 4.	
Glycerinum Aluminis ..	1 to 5.	
Glycerinum Amyli	1 to 8.	
Glycerinum Boracis ..	1 to 6.	
Glycerinum Plumbi Subacetatis 1 in 2½.		
Unguentum Glycerini Plumbi Subacetatis	4½ to 24.	
Glycerinum Tragacanthæ ..	1 in 4½.	

Glycerine of Tannic Acid is frequently made as strong as 1 to 2. Glycerine of Alum is a useful astringent in diseases of the throat, and less disagreeable than Tannin.

Glycerinum Plumbi Subacetatis is used in eczema, first diluted 1 to 7 with Glycerine, the strength being gradually increased; it has also been used, applied on wool, for uterine affections. The Ointment is useful in eczema and tinea tarsi.

Glycerinum Tragacanthæ is used as an excipient for pills.

Unofficial Preparations—

Boroglyceride.—See page 5.

Glycerine Jelly.—See page 128.

Gelato-glycerine.—See page 128.

Glycerinum Aluminis et Acidi Tannici.—Alum 1, Tannin 1, Glycerine 6. A very astringent throat pigment. One ounce to a pint of water forms a useful astringent vaginal injection.

Glycerinum cum Aqua Rosæ.—Of various strengths. An agreeable emollient lotion for the skin.

Glycerinum Belladonnæ.—See page 54

Glycerinum Bismuthi Nitratis.—1 to 8. Useful as a stimulant application in eczema.

Glycerine and Codeia Jelly.—See p. 94.

Glycerinum Ferri Dialysati.—See page 123.

Glycerinum Hydrargyri Perchloridi.—See page 147.

Glycerinum Iodi.—See page 164.

Glycerinum Olei Ricini.—1 in 2. A viscous compound, flavoured with Lemon or Almonds, very suitable for children. It is not nauseous. *Dose*—1 drachm or more.

The following form appears in the *B. P. Addendum '90*:—

Mistura Olei Ricini, B. P. (Ad.)—3 drachms in 1 ounce, emulsified with potash and flavoured. *Dose*—½ to 2 ounces.

Glycerinum Pepsinæ.—See page 214.

Glycerinum Podophylli.—See page 237.

Glycerites.—Preparations of Glycerine, analogous to Syrups, for internal administration. In many cases they are preferable to Syrups, being more stable and less likely to disagree with the stomach (see page 129). All the metallic salts which are made into Syrups, may be made into Glycerites of the same strength.

Glycerinum Saponatum.—Consists of a neutral soda soap dissolved in Glycerine. A yellowish elastic mass, which is odourless and melts at the body temperature. A pleasant application for the skin, and suitable as a basis for other medicaments, as Salicylic Acid, 5 per cent.; Resorcin and Salicylic Acid, of each 5 per cent.; Creasote and Salicylic Acid, of each 5 per cent.; Salicylic Acid, 3, and Pix Liquida, 10 per cent.—*Ph. J. Aug 2, '90.*

Glycerine Tinctures or Glyceroles.—Preparations of the same strength as Tinctures, but

containing Glycerine in place of Spirit. Useful in cases where alcohol is contra-indicated. They can be prepared from most drugs in common use. Glycerole of Nux Vomica, same strength as the B. P. Tincture, also of Ipecacuanha, same as the Wine, have been recommended.—L. Dec. 13, '90.

GLYCYRRHIZINUM AMMONIATUM, U.S.P.

Ammoniated Glycyrrhizin.—A scale preparation made from the root of *Glycyrrhiza glabra* or Liquorice (Radix *Glycyrrhizae*, B. P.) by treating with water and Ammonia, precipitating with Sulphuric Acid, redissolving in Dilute Ammonia, and spreading on glass plates to dry.

In dark brownish-red scales, sweet in taste, soluble in water and alcohol. Treatment with an alkali liberates ammonia, and with an acid precipitates *Glycyrrhizin* or *Glycyrrhizic Acid* ($C_4 H_4 NO_3$), which forms a jelly when dissolved in hot water, and when dry is an amorphous yellow powder. *Glycyrrhizic Acid* exists in Liquorice as an ammoniacal compound, which Ammoniated Glycyrrhizin is intended to represent.

Ammoniated Glycyrrhizin is used chiefly as a flavouring agent for mixtures containing Quinine, Sulphate of Magnesium, Chloride of Ammonium, etc.

Dose— $\frac{1}{2}$ to 5 grains, or more.

GOKHRU.

Gokhru; Gokeroo.—The fruit of *Pedalium Murex* (Sesame), a plant common in the Madras Peninsula. A demulcent and diuretic, and used in the cure of nocturnal emissions, incontinence of urine, and impotence. The fruit, as sold in the bazaars, as well as the leaves and stems, is rich in mucilaginous matter, and a mucilage made from the latter is much prized in India as a remedy for gonorrhœa and dysuria.

Infusum Gokhru.—1 in 20. *Dose*—20 ounces *per diem*; should be prepared fresh each day.

Chota Go'khrū.—The fruit of *Tribulus terrestris* (Zygophyllace), another Indian plant. The capsule is 5-celled and very prickly, and has a faintly aromatic and rather agreeable taste. It is used in Southern India as a diuretic.

GOSSYPIUM, B. P.

Cotton Wool; Absorbent Cotton.—The hairs of the seed of *Gossypium herbaceum* (Malvaceæ), and other species, freed from impurities and fatty matter. The *absorbent* wool is now official. It is used in the preparation of Pyroxylin (see page 96), also as a wound dressing.

Gauze and Cotton Wool Tissue.—See page 128.

Medicated Cottons.—In addition to the Wools mentioned under other heads (see INDEX), Cotton Wool is medicated with Alum, Arnica, Benzoic Acid, Camphor, Chrysophanic Acid, Cubeb, Kramaria, Opium, Resorcin, and Tannic Acid. All medicated cottons should be made from wool entirely free from fat (see also **Gauzes**, page 127), and should be examined to see that they are uniformly medicated.

Artificial Sponges.—These are made of Absorbent Cotton formed into balls and covered with antiseptic gauze, for use by surgeons in place of sponges. They are also made containing a glass capsule in the centre filled with an antiseptic, as Eucalyptus, Carbolic Acid, Thymol, etc., which may be broken by pressure, allowing the antiseptic agent to permeate the sponge. Adaptations of these sponges are also made in the form of **Wound Pads** and **Vaginal Tampons**.

Gossypii Radicis Cortex, U. S. P.—The root bark of *Gossypium herbaceum*, and other species. Used as an emmenagogue and parturient.

and in some cases is preferable to Ergot in labour.

Extractum Gossypii Fluidum, U. S. P.
—Not miscible with water. *Dose*—10 to 60 minims.

Tinctura Gossypii.—1 in 4. *Dose*—One drachm, 3 times a day.

The Cotton plant is cultivated in India where it is known as *Kapas*, and, though not an article of commerce here, the root bark may be obtained fresh in most parts of the country. —*P. J. Ind.* The fixed oil obtained from the seeds is known as *Cotton Seed Oil*, but is not used medicinally.

GRINDELIA, U. S. P.

Gum Plant.—The leaves and flowering tops of *Grindelia robusta* (Compositæ), from California. Although this is the official source of the *U. S. P.*, yet the drug as used in Europe is mostly obtained from *G. squarrosa*, a plant which appears to be even more valuable medicinally than *G. robusta*. A valuable antispasmodic in whooping cough, bronchitis, etc., but especially for asthma, in which it exerts a singular efficacy.

Extractum Grindelieæ.—Alcoholic. *Dose*—3 grains, 3 times a day.

Extractum Grindelieæ Liquidum, B. P. C.—Not miscible with water. *Dose*—1 to 30 minims at the beginning of the paroxysm and repeated every half hour or hour. Should be given in sweetened water or milk to prevent separation of the resin.

GUAIACOL.—See page 101.

GUARANA, U. S. P.

Brazilian Cocoa.—The seeds of *Paullinia sorbilis* (Sapindaceæ), roasted, powdered, made into a paste, and dried. Imported from Brazil.

Contains 3·6 to 6·5 per cent. of *Guaranine*, an alkaloid identical with Caffeine (see page 62). Guarana is used in sick-headache and as a nervine tonic; it is also useful in diarrhoea and dysentery.—*L.* '72, ii. 313, 507.

Elixir Guaranae, B. P. C.—A tincture (flavoured with Syrup and Oil of Cinnamon) made with proof spirit after first treating the Guarana with Magnesia to liberate the alkaloid and render inert matter insoluble. *Dose*—½ to 2 drachms.

Extractum Guaranae Fluidum, U.S.P.—Not miscible with water. *Dose*—5 to 30 minims.

Tinctura Guaranae.—Strength—1 in 4. *Dose*—½ to 1 drachm.

Guaranine.—The alkaloid of Guarana (see above). Being identical with Caffeine, it is administered in the same manner and for the same purposes. *Dose*—½ to 5 grains, or more.

Elixir Erythroxyli et Guaranae.—Each fluid drachm represents 7½ grains each of Coca and Guarana. *Dose*—1 to 2 drachms.—*Ph. J.* July 28, '88.

GYNOCARDIAE OLEUM, P. I.

Chaulmugra Oil.—The oil expressed from the seeds of *Gynocardia odorata* (Bixineæ), found in the forests from Sikkim to Rangoon. A pale brown oil containing 60 per cent. of palmitic acid, and therefore always solid in colder climates. It contains 3 other fatty acids, of which *Gynocardic Acid* (see below) is supposed to be the active ingredient. The oil sold in the bazaars is usually impure.

Chaulmugra Oil has been used externally for rheumatism, and also internally in doses of 3 to 4 minims for the same complaint; combined with Cod Liver Oil, 1 or 2 minims once a day may be

given to children. Largely used in India as a remedy for leprosy, both externally and internally, and in Europe for skin diseases generally, also as an application to the chest for phthisis.

A case of leprosy in an Englishman was cured by this oil, administered in large doses (60 to 90 minims) thrice daily and applied freely to the skin. Dose lessened as symptoms disappeared.—*B.M.J.* July 6, '89.

Dose—2 to 6 minims, 3 times a day, gradually increased to 15 or 20 minims, or until it causes nausea, when the dose may be lessened or the remedy suspended for a time.

10 minims 3 times a day has caused vomiting and purging with loss of appetite.—*Pg. Ind.*

Unguentum Gynocardiae.—1 to 3—*M.* The *P. I.* orders an ointment made from the powdered seeds.

Gynocardic Acid, C₁₈H₃₀O₂ (?).—A fatty acid, the active principle of Chaulmugra Oil, existing in the oil to the extent of 11·7 per cent. A yellowish unctuous solid, melting at 85° F., with an acrid burning taste. It gives a green colour with sulphuric acid, a reaction which forms a characteristic test for the oil. Used internally and externally for the same purposes as Chaulmugra Oil, to which it is considered superior in skin diseases, especially eczema. An ointment of 15 to 25 grains to 1 ounce of vaseline has been recommended—*Pg. Ind.* **Dose**—½ grain gradually increased to 2 or 3 grains in pill.

HAEMATOXYLON, B.P.

Logwood.—The heart-wood of *Hæmatoxylon campechianum* (Leguminosæ). Imported from America, after being subjected to a process of fermentation.

Official Preparations—Decoction, 1 in 20; Extractum (Solid),

Extractum Hæmatoxyli Liquidum,
B. P. C.—Made from *unfermented* Logwood. Contains the Hæmatoxylin and all the medicinal properties unchanged. —*Ph. J.* Oct. 1, '87. *Dose* — $\frac{1}{2}$ to 2 drachms.

Hæmatoxylin. $C_11H_{14}O_6$.—In colourless crystals sparingly soluble in water, freely in alcohol. It is used for staining histological specimens. In contact with an alkali, as the ammonia of the air, Hæmatoxylin changes to *Hemistain* ($C_11H_{14}O_4$), a dark-red substance, with a yellowish-green lustre. This gives the well-known colour to ordinary Logwood.

Logwood may be adulterated with Brazil wood, the wood of several species of *Cesalpinia*. An infusion of the former gives a purple, and of the latter a red, coloration with alkalies.

HAMAMELIS.

Witch Hazel.—The bark and leaves of *Hamamelis virginica* (Hamamelidaceæ), an American tree. A powerful astringent and haemostatic, useful in haemorrhoids, diarrhoea, leucorrhœa, etc., also as an application for ulcers, sprains, and abrasions. *Haseline* and *Pond's Extract* are preparations of the drug.

The bark and leaves are now official.

Hamamelidis Cortex, B. P. (Ad.)—Witch Hazel Bark.

Tinctura Hamamelidis, B. P. (Ad.)—1 in 10; *B. P. O.* formula.

A valuable haemostatic in all forms of passive haemorrhage. A lotion of 1 drachm to 3 ounces of water forms a useful injection for bleeding piles; it should be injected daily, or applied as a lotion 3 or 4 times a day, and the ointment or a piece of lint dipped in Hazeline applied during the intervals. *Dose*—2 to 5 minims, or more.

Extractum Hamamelidis.—Solid. *Dose*—1 $\frac{1}{2}$ to 2 grains in pill or suppository.

Hamamelidis Folia, B. P. (Ad.)—
Witch Hazel Leaves.

Extractum Hamamelidis Liquidum,
B. P. (Ad.)—Not miscible with water. *Dose*—
2 to 5 minimis.

Unguentum Hamamelidis, B. P. (Ad.)
—1 (Liq. Extract) in 10.

Hamamelidin or Hamamelin.—The
powdered extractive from the leaves. *Dose*—½ to
2 grains in pill or suppository.

Hamamelis Wool is ordered in the *Throat Hospital Pharmacopœia*.

HELENIN.—See page 159.

HIBISCI CAPSULÆ, P. I.

Edible Hibiscus; Okra.—The fruit of *Hibiscus esculentus*, var. *esculentus* (Malvaceæ), cultivated in India. Recommended as emollient, demulcent, and diuretic, similar to Althaea.

A Decoction, 3 in 20, is official. *Dose*—3 to 6 ounces, or *ad libitum*. The steam from this may also be inhaled for cough, etc.—*Pg. Ind.* i. 210.

HOLARRHENA.

Coneassi or Tellicherry Bark; Kudasala.—The bark of *Holarrhena antidysenterica* (Apocynaceæ), a shrub common in India. The bark has been confounded with that of *Wrightia tinctoria*, which is comparatively inert, but the former is of a dirty white or buff colour, while the latter is reddish brown and smooth.—*Dymock*. A valuable remedy for diarrhoea and dysentery, being given as a Decoction, 1 in 10, in doses of 4 drachms, four times a day, with 1 minim Tincture of Opium in each dose.—*I. M. G.* '66, i. 352.

The seeds of this plant and of *H. pubescens* are known as *Karwa Inderjao*, and *Inderjao talk*, respectively, to distinguish them from *Inderjao sheri*, those of *Wrightia tinctoria*. They have been found serviceable as a febrifuge and anthelmintic, and as a tonic to the urinary tract, especially in stricture. They also act as an astringent like the bark. Given in the form of a Tincture, 1 in 8.
Dose— $\frac{1}{2}$ to 2 drachms.

HOMATROPINE.—See page 50.

HYDRACETIN.

Acetyl-phenyl-hydrazin. C₉H₉. NH

NH. C₉H₉O₂. A white, odourless, almost tasteless, crystalline powder, derived from coal-tar. Soluble 1 in 30 of water, freely in alcohol. It reduces Fehling's solution, nitrate of silver, mercuric and ferric salts, and chloride of platinum, and decolorises a solution of permanganate of potassium.—*Ph. J.* June 29, '89.

A powerful antipyretic. It must be administered with caution and not continuously, as it very readily produces toxic effects.

A 10 per cent. ointment has been used with success in psoriasis, but as toxic symptoms were produced it is not recommended.—*Ph. J.* July 27, '89.

Dose— $\frac{1}{2}$ to 4 grains daily, in one or two doses.

Pyrodin, an impure form containing only about 25 per cent. of acetyl-phenyl-hydrazin, was first brought out, but owing to its very uncertain action, combined with its tendency to produce toxic symptoms, soon fell into discredit.—*L.* Dec. 8, '88.

HYDRARGYRUM, B. P.

Mercury, Hg—Mercurial preparations are largely employed as antisiphilites, cholagogues, and antiseptics, and externally as escharotics, or

as stimulants to indurated or inflamed parts. In syphilis, care must be taken that the doses are sufficiently small to avoid salivation.

Official Preparations containing Metallic Mercury—

Hydrargyrum cum Creta	1 in 3
Emplastrum Hydrargyri	1 in 3
Emplastrum Ammoniaci cum Hydrargyro.	1 in 5
Linimentum Hydrargyri	1 in 6
Pilula Hydrargyri	1 in 3
Suppositoria Hydrargyri—5 grains (Ointment) in each.	

Unguentum Hydrargyri	1 in 2
Unguentum Hydrargyri Compositum ..	1 in 4

Other Preparations of Mercury—

Oleum Cinereum, Injectio Hydrargyri

Hypodermica, Grey Oil.—Contains Mercury (30 per cent.) with Lanolin and Olive Oil. For syphilis, $1\frac{1}{2}$ to 2 minims injected deeply into the back every 5 to 8 days, the intervals being afterwards made longer and the dose increased to 2 to 3 minims. Before injection the oil should be warmed over a spirit lamp.—*B. M. J.* Dec. 28, '89.

A better formula containing 40 per cent. Mercury, with Mercurial Ointment and Liquid Vaseline has also been recommended.—*Ph. J.* Mar. 2, '89. *Dose*—1 to 2 minims.

Plaster Mulls are prepared containing 1 grain Mercury to the square inch, also with the addition of $\frac{1}{2}$ grain **Carbolic Acid**, and $\frac{1}{2}$ grain **Oxide of Zinc**.

Alanine Mercury, Mercury Amido-propionate ($\text{CH}_3\text{CH}(\text{NH}_2)\text{COO}_2\text{Hg}$).—Minute white needles, soluble 1 in 3 of water. Possesses the properties of other mercurials, and is not very poisonous. Given internally and hypodermically for syphilis. *Dose*— $1\frac{1}{2}$ to $1\frac{1}{2}$ grains in 24 hours.

Hydrargyrum Ammoniatum, B. P., White Precipitate. NH_3HgCl .—Never used internally. **Antidotes**—Stomach-pump or emetics; white of egg, flour and water, or barley water; stimulants.

Unguentum Hydrargyri Ammoniati,
B. P. — 1 in 10. As a stimulant in chronic skin diseases, and for pediculi.

Hydrargyri Carbolas, Phenol Mercury. $C_6H_5OHg(OH)_2$. — A neutral salt in the form of a white amorphous powder, prepared by the double decomposition of Mercuric Chloride and a solution of Carbolic Acid in Caustic Potash. Has been found very efficacious in syphilis, producing no gastric disturbance. *Dose* — $\frac{1}{2}$ to 2 grains daily, in pill, after food. — *Ph. J.* Feb. 26, '87.

Hydrargyri Cyanidum, U. S. P., Cyanide or Bicyanide of Mercury. — In colourless crystals, soluble 1 in 7 of water. It is not decomposed by alkalies. A powerful antiseptic, used as an application to syphilitic rashes and sores. For diphtheria, $\frac{1}{20}$ grain with $\frac{1}{2}$ minim Tincture of Aconite, in honey, is given internally; a gargle, 1 in 10,000 being also used. $\frac{1}{20}$ grain pills are also given, one twice daily. *Dose* — $\frac{1}{20}$ to $\frac{1}{2}$ grain.

Injectio Hydrargyri et Cocainæ Hypodermica. — Hydrochlorate of Cocaine, $\frac{1}{2}$ grain; Cyanide of Mercury, $\frac{1}{2}$ grain; Water, 15 minims. For syphilis.

Mercuro-Zinc Cyanide. — A white powder, formed by precipitation of solutions of mercuric and potassic cyanides by zinc sulphate. It is not a definite double salt, but simply a Cyanide of Zinc containing more or less Mercuric Cyanide according to the strength of the solution used. It may contain as much as 36 per cent. of the latter. It is recommended by Sir Joseph Lister as a valuable unirritating antiseptic, used as an ointment for skin diseases, or for operations in the form of

Mercuro-Zinc Cyanide Gauze. — Contains 2 or 3 per cent. by weight of the cyanide, tinted with haematoxylin (pale blue). Before use it must be moistened with a 1 in 4000

²
solution of corrosive sublimate.—*L.* Nov. 9, '89 :
Ph. J. Jan. 11, '90. It is sold in 6-yard pieces.

Hydrargyri Iodidum Rubrum, B. P.,
Biuniode of Mercury, Mercuric Iodide. HgI_2 .—A vermillion-coloured powder, insoluble in water, soluble 1 in 50 of castor oil, and in solutions of other iodides forming double salts, also in solution of perchloride of mercury. Used in syphilis, as an emmenagogue, and as a pigment or spray in diphtheria and scarlatina. *Dose*— $\frac{1}{3}$ to $\frac{1}{2}$ grain.

Unguentum Hydrargyri Iodidi Rubri, B. P.—16 grains to the ounce.

Unguentum Hydrargyri Iodidi Rubri Dilutum.—4 grains to the ounce.

Pilulae Hydrargyri Iodidi Rubri (Gelatine coated).— $\frac{1}{2}$ and $\frac{1}{3}$ grain each.

Injectio Hydrargyri Iodidi Rubri Hypodermica—1 grain in 64 minims with Iodide of Sodium, *q. s.* *Dose*—2 to 6 minims.

Liquor Arsenii et Hydrargyri Iodidi.—See page 48.

Hydrargyri et Potassii Iodidum, Potassio-Mercurie Iodide.—Yellow crystals. For syphilis, and as an antiseptic lotion, 1 in 8,000 of water. *Dose*— $\frac{1}{3}$ to $\frac{1}{2}$ grain.

Hydrargyri Iodidum Viride, U. S. P., Green or Proto-Iodide of Mercury, Mercurous Iodide. HgI .—A dull green powder, darkening on exposure to light, insoluble in water. Prepared by direct combination of Mercury and Iodine. When prepared by precipitation from solution of Mercurous Nitrate by Iodide of Potassium it is pale yellow, and is said to be purer, the green colour of the other preparation being due to metallic mercury.—*Ph. Rec.* Sept. 10, '84. Was official in the *B. P.* '67, but has now been deleted. Its action is similar to Calomel, and it is given in syphilitic cases where the Red

Iodide cannot be borne. It is used as an **Ointment** (1 to 8) for serofulous and venereal eruptions, and chronic skin diseases. An ointment, 20 grains to the ounce, with **Atropine** (1 grain) is recommended for softening and reducing indurated fascia of the hand, which causes the fingers to close upon the palm.—*Sq.* *Dose*— $\frac{1}{2}$ to 3 grains.

Pilulae Hydrargyri Iodidi Viridis (or **Flavi**).—Gelatine coated, contain $\frac{1}{4}$ grain each.

Hydrargyri Lanolinum.—See page 178.

Hydrargyrum Naphtholicum, β -

Naphthol Mercury.—A yellow, neutral, insoluble, odourless powder containing 30 per cent. of Mercury. It is used mixed with kieselguhr (1 or 2 in 100) or as a **Salve Mull**, being said to promote the healing of wounds in a remarkable manner. It is also a mild antisyphilitic, and is said to have a specific action in typhoid. *Dose*— $\frac{1}{2}$ to 1 grain.

Hydrargyri Naphtholacetas, Mercurio- β -Naphthol Acetate.—An amorphous white powder, insoluble in water. Used as an antisyphilitic, and, diluted with kieselguhr, as a dusting powder for wounds. *Dose*— $\frac{1}{2}$ to 1 grain.

Hydrargyri Nitratis Liquor Acidus, **B. P.**.—A solution of Mercurio Nitrate, $Hg_2 NO_3$, in Nitric Acid. Sp. gr. about 2.0. Used as a caustic.

Unguentum Hydrargyri Nitratis, **B. P.**, Citrine ointment; and

Unguentum Hydrargyri Nitratis Dilutum, **B. P.**.—The latter contains 1 part of the former in 3. Used as a stimulant in skin diseases, also (the Dilute) in tinea ciliaris, applied with a brush.

Hydrargyri Oleatum.—See page 200.

Hydrargyri Oxidum Flavum, **B. P.**, HgO .—A yellow powder, prepared by precipitation. Insoluble in water. Used as an **Oint-**

ment (15 grains to the ounce) for eczema, ring-worm, etc., and diluted, 1 to 2, for eye diseases.

Hydrargyri Oxidum Rubrum, B. P., HgO.—An orange red powder prepared by heating Mercurous Nitrate. Insoluble in water. Employed for indolent ulcers, etc., in the form of **Unguentum Hydrargyri Oxidi Rubri, B.P.**—1 in 8.

Hydrargyri Perchloridum, B.P.; Corrosive Sublimate; **Hydrargyri Chloridum Corrosivum, U. S. P.** HgCl₂.—Colourless crystals, soluble 1 in 19 of water, freely soluble in spirit, ether, and glycerine. A powerful irritant and antiseptic, given internally for syphilis, and used externally as an eye-wash 1 grain in 8 ounces, as a gargle 1 grain in 4 ounces, as a lotion 1 grain in 1 ounce, or as an ointment 2 to 8 grains to 1 ounce.

Dose— $\frac{1}{10}$ to $\frac{1}{2}$ grain.

Has been recommended for dysentery in India, in doses of $\frac{1}{10}$ grain every 4 hours.—*L. '89*, ii, 901.

The Liquor is recommended for diphtheria, in 1 drachm doses every hour at first, then less frequently. Results most satisfactory.—*B. M. J.*, Jan. 3, '91.

Hypodermically it has been given with complete success in cholera in India $\frac{1}{2}$ grain was injected into the gluteal region. Cannot be retained if given by the mouth.—*L. M. G.*, July '89.

Hypodermic Tablets contain $\frac{1}{10}$ and $\frac{1}{20}$ grain each.

Official Preparations.—Liquor, containing $\frac{1}{2}$ grain in 1 ounce with $\frac{1}{2}$ grain Chloride of Ammonium (a double salt is formed, see *Sal Alembroth*), and Lotio Flava, 18 grains in 10 ounces of Lime water.

Incompatibles.—Alkalies, Nitrate of Silver, Albumen, Lead, Tannin.

Antidotes.—Emetics; white of egg and water.

Corrosive Sublimate is a powerful antiseptic, 1 in 10,000 being sufficient for the destruction of

bacilli. It is largely used in surgical operations, a solution 1 in 1,000 being most useful. For the ready preparation of such a solution the following are suggested :—

Glycerinum Hydrargyri Perchloridi.—40 grains in 1 drachm. 1 drachm in 4 pints (80 ounces) of water forms a solution 1 in 1,000.

Antiseptic Tablets.—Made of 2 strengths: one Tablet of No. 1 size forming with 20 ounces of water a solution 1 in 3,000; one of No. 2 in the same quantity of water being equal to 1 in 1,500. They have an acid reaction, consequently the mercury cannot be precipitated on coming in contact with albuminous matter, or by alkalinity in the water used.*

Sublimate Lotiforms.—Muslin bags containing wool charged with Mercuric Chloride, of such strength that one in a pint of water forms a lotion of 1 in 5,000. They are coloured with magenta.

Antiseptic Cologne.—An American speciality, contains Corrosive Sublimate (1 grain in 1 ounce) with Thyme, Eucalyptus, and Eau de Cologne. For use in sick-rooms as a spray, and similar purposes.

Sublimate Wood Wool, $\frac{1}{2}$ per cent. (see p. 272), and **Sublimate Gauze, Lint, and Wool,** $\frac{1}{2}$ per cent., are used as antiseptic dressings.

Sal Alembroth, $2\text{NH}_4\text{Cl} \cdot \text{HgCl}_2 \cdot \text{H}_2\text{O}$.—The double Chloride of Mercury and Ammonium. Crystals, freely soluble in water, spirit, and glycerine. A powerful antiseptic, and less irritating than Corrosive Sublimate, as it does not combine so readily with albumen. Has been given hypodermically for syphilis, $\frac{1}{3}$ grain in 10 minims of water.

Alembroth Gauze (1 per cent.), **Wool** (2 per cent.), and **Cotton Wool Tissue** (2 per

* In making acidified solutions of the salt for antiseptic purposes Tartaric Acid should not be used, as it reduces the Mercuric Chloride to Mercurous Chloride or Calomel.—*Ph. J.* April 20, '89.

cent.) are used as dressings. They are tinted blue.

* **Eucallembroth Gauze.**—Tinted with magenta, contains $\frac{1}{1000}$ of its weight Sal Alem-broth, with Eucalyptus and Castor Oils.

Hydrargyri Persulphas, B. P., Mer-curic Sulphate, $HgSO_4$.—A heavy white powder, used for working some kinds of medical batteries. An Ointment (15 grains in 1 ounce) is used for ringworm.

Turpeth Mineral is a yellow Oxysulphate ($HgSO_4 \cdot 2HgO$) formed by decomposing the Per-sulphate with water.

Hydrargyri Salicylas.—A white powder, slightly soluble in water. Internally it is useful as an antisyphilitic; externally as a dusting powder for specific sores. *Dose*—} grain.

Hydrargyri Subchloridum, B. P., Calomel, Hydrargyri Chloridum Mite, U. S. P. $HgCl$.—A dull, heavy, white powder, insoluble in water. It becomes black when digested with Ammonia, Caustic Potash, or Lime.

Official Preparations.—*Lotio Nigra*, 3 grains to 1 ounce; *Pilula Composita*, 1 in 5; *Unguentum*, 80 grains to 1 ounce.

Incompatibles.—Iodide of Potassium, Caustic Alkalies, Nitro-hydrochloric acid, Hydrocyanic Acids, Soap, Alkaline Chlorides.

An alterative, cholagogue (this property has been contradicted), purgative, and diuretic. A combination of Calomel and Digitalis is recommended for cardiac dropsy.—*L. Jan. 5, '89.* In diphtheria, 1 of Calomel with 3 of starch, brushed 6 or 7 times in 24 hours in the pharynx, with cold water compresses on the throat and a Nitrate of Sodium mixture internally effects a rapid cure. The Calomel unites with the Chloride of Sodium in the saliva to form Perchloride of Mercury, which destroys the virus.—*L. Mar. 16, '89.*

1 to 2 grains, with an equal quantity of Chloride of Sodium, injected deeply into the gluteal region every 5 or 6 days, cures syphilis on the same principle as the last. Care must be

taken to shake the mixture before injection, and to inject with the point of the needle downwards.—*Ibid.*

Dose— $\frac{1}{2}$ to 1 grain as an alterative, 2 to 8 grains as a purgative.

Hydrargyri Succinimide, Succinimide or Imido-succinate of Mercury.—A white silky powder, readily soluble in water. Used hypodermically in doses of $\frac{1}{2}$ grain for syphilis, a 1 per cent. solution being injected. It is mild, non-irritating, does not precipitate albumen, and is most suitable for women and children.—*L. Oct. 11, '90.* If Cocaine be added to diminish pain, the addition should not exceed 1 per cent., or precipitation will occur.—*Ph. J. Nov. 2, '88.*

Hydrargyri Tannas, Mercurous Tannate.—A dark green odourless and tasteless powder containing 50 per cent. of Mercury. Recommended as a remedy for syphilis. It is very quickly absorbed into the system when taken internally, being observed in the urine 24 hours after administration. The results are rapid and satisfactory, and no irritation of the bowels as a rule is produced, so that it is possible to administer it for any length of time without disturbing the system. Should it cause diarrhoea in weakly patients, $\frac{1}{2}$ grain Tannic Acid or $\frac{1}{2}$ grain Opium may be added to each dose. **Dose**— $\frac{1}{2}$ grain, in pill.

Hydrargyri Thymolacetas, Thymol-Acetate of Mercury, $(C_{10}H_7O)Hg_2(C_6H_5O_2)$.—A white crystalline powder, insoluble in water, soluble in spirit. Recommended as an intro-muscular injection for syphilis.—*Ph. J. Feb. 2, '89.* **Dose**— $\frac{3}{4}$ to $1\frac{1}{2}$ grain.

HYDRASTIS RHIZOMA, B.P. (Ad.)

Hydrastis; **Golden Seal**.—Known also as *Indian Turmeric*, *Orange Root*, *Yellow Root*, *Yellow Puccoon*. The dried rhizome and rootlets

of *Hydrastis canadensis* (Ranunculaceæ). Contains *Berberine* (see page 56), and *Hydrastine* (see below). Possesses tonic stomachic properties, and is useful in all diseases affecting the mucous surfaces, also in torpor of the liver, menorrhagia, and uterine haemorrhages. It is preferable to Ergot and Iron in the majority of cases, though not in extreme cases, and in menorrhagia acts well if given some time before the period, acting at the same time as a tonic and appetiser. In haemoptysis, 20 to 30 minimis of the Liquid Extract 3 times a day, with rest in bed, ice, cold milk, and simple diet, acts well, causing no ill effects except an occasional headache after large doses (40 minimis or more).—*L. Jan. 5, '89.*

Extractum Hydrastis Liquidum, B. P. (Ad.).—From the *B. P. C.* formula.
Dose—5 to 30 minimis.

Applied to the throat daily is useful in pharyngitis; similar treatment is suggested for chronic inflammation of other mucous membranes. —*L. Mar. 16, '89.*

Tinctura Hydrastis, B. P. (Ad.).—1 in 10, *B. P. C.* formula. *Dose*—20 to 60 minimis.

Hydrastin.—The dried extractive. Consists principally of Hydrochlorate of Berberine, and must be distinguished from the crystalline alkaloid, *Hydrastine*. Aperient, stomachic, and cholagogue, acts as an antiseptic to ulcers, and is useful in gonorrhœa, an injection containing 1 drachm, with 2 drachms Solution of Morphia, in 1 ounces of Mucilage, used 4 times a day, being recommended for the last mentioned complaint. An ointment of 5 to 20 grains to the ounce has proved serviceable in eczema.—*L. '85, ii. 87.*
Dose—2 to 6 grains.

Hydrastina, Hydrastine. $C_{21}H_{21}NO_3$. An alkaloid occurring in *Hydrastis* to the extent of 1·5 per cent. In crystals resembling strychnine, insoluble in water, soluble in alcohol. Taste bitter. Useful in fever, especially typhus.
Dose— $\frac{1}{2}$ to 5 grains.

Hydrastinæ Hydrochloras.—A crystalline salt, freely soluble in water and spirit. *Dose*— $\frac{1}{2}$ to 5 grains.

Hydrastinina, Hydrastinine. $C_{11}H_{11}NO_2$, H_2O .—Obtained by the oxidation of Hydrastine*.—White needles, freely soluble in spirit, moderately soluble in water. Possesses the properties of Hydrastis in a powerful degree.

Hydrastinæ Hydroch'oras, $C_{11}H_{11}NO_2$, HCl.—Freely soluble in water. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain, hypodermically; may be increased to $\frac{1}{2}$ or even $1\frac{1}{2}$ grain.

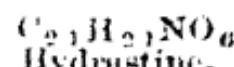
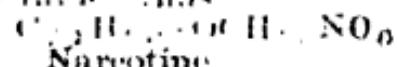
Berberine Salts.—See page 56.

HYDROCOTYLES FOLIA, P. I.

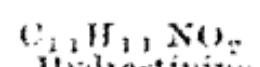
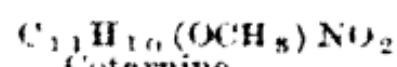
Indian Pennywort.—The leaves of *Hydrocotyle asiatica* (Umbelliferae), common throughout India. They are said to contain an oily substance called *Fellaria*, the presence of which has not been verified; it appears to consist of a mixture of substances.—*Ph. Ind.* ii. 109. An alternative tonic; locally, a stimulant. It has been recommended for leprosy, but is not a specific, merely ameliorating the symptoms and improving the general health. Has been found useful in syphilis, dysentery of children, and both locally and internally for ulcers and skin diseases.

Pulvis Hydrocotyles, P. I.—The dried leaves powdered. 10 parts of the fresh leaves yield 1 part of powder. *Dose*—5 to 10 grains thrice daily. Sprinkled on ulcerated surfaces, it stimulates them to healthy action.

* It has been shown that Hydrastine is related to Nareotine obtained from opium by containing a methoxyl group (OCH_3) less, and the same relation exists between Cotarnine (the oxidation product of Nareotine) and Hydrastinine, thus:



and



Cataplasma Hydrocotyles, P. I.,
Hydrocotyle Poultice.—The fresh leaves moistened with cold water. Applied as a stimulant to syphilitic and other ulcers.

HYDROGENII PEROXIDUM.

Peroxide of Hydrogen; Solution of Hydroxyl; Oxygenated Water. H_2O_2 .—A colourless liquid, prepared by decomposing Peroxide of Barium with Sulphuric Acid. When pure its sp. gr. is 1.452, and it gives off 475 times its volume of oxygen when heated; in commerce a more permanent compound giving off 10 to 20 times its volume of oxygen is usually met with.

One of the most powerful oxidising agents known, being used to bleach the hair and delicate fabrics which might be injured by chlorine, and also as a disinfectant. It is produced by the oxidation of various essential oils, forming the active ingredient of the disinfectant known as *Sanitis* (see next page).

It has been used in whooping cough, 1 drachm 3 times a day; in catarrhal affections, 2 drachms of a 4 per cent. solution 3 or 4 times a day; and as a pigment in diphtheria. Applied to a wound it acts as a powerful styptic.—*L.* Sept. 28, '89.

Dose—½ to 2 drachms.

Bactericides, Kingsett's.—A series of liquid antiseptics, composed of Peroxide of Hydrogen (5 volumes) as a basis, with some active antiseptic, as Mercuric Chloride (5 per cent.), Carbolic Acid, Sulphophenic Acid, etc.

Ozonic Ether.—Ether containing Peroxide of Hydrogen in solution, 30-volume strength. Has been given internally for diabetes (it oxidises the sugar), used locally for scarlet fever, and as a wash for purulent discharges.

Ozonised Ointment (Day).—Contains Ozonic Ether, 1 drachm in 1 ounce, with Benzoic Acid and Otto of Roses. Rubbed over the whole body 3 times a day arrests the spread of scarlatina. Useful for rubbing over the hands and under the nails previous to making post-mortem examinations, and for accoucheurs.

Sanitas Preparations.—These are prepared from oil of turpentine, and include :—

Sanitas Disinfecting Fluid.—Contains Peroxide of Hydrogen, Thymol, Camphoric Acid, and a soluble Camphor. A non-poisonous antiseptic.

Toilet Sanitas.—The same, perfumed.

Sanitas Oil.—An air-oxidised turpentine. Suitable for general use as a disinfectant.

Sanitas Emulsion.—The above emulsified with acacia. Miscible with water.

Sanitas Soaps, Powder, Ointment, Gauze, etc., are also prepared.

Oxygen. inhaled as a gas, or drunk as aerated water, is much used in France as a remedy for dyspepsia, diabetes, etc. It is also inhaled as *Etherial Oxygen*, a mixture of ether vapour and oxygen produced by adding Permanganate of Potash to Ozonic Ether in an inhaler, for whooping cough, asthma, etc.

HYDRONAPHTHOL.—See page 196.

HYDROQUINONE.

Hydrochinon ; Quinol ; Pyrogentisic Acid ; Para-di-oxy-benzene. $C_6H_4(OH)_2$.—An insomeric of Resorcin and Pyrocatechin, usually obtained from coal-tar; it may be obtained from quinone or quinic acid. In crystals soluble in water, alcohol, and ether.

A powerful and harmless antiseptic and antipyretic. It causes no irritation when injected hypodermically, and is very suitable in eye operations. Its properties are similar to, but more powerful than those of Resorcin. It is also used as a photographic developer.

Dose— $\frac{1}{2}$ to 5 grains.

HYDROXYLAMINE.

Oxyammonia. NH₂OH. —A base prepared by the reduction of Ethyl Nitrate. It has never been isolated, and is known only in aqueous solution.

One of the most powerful antiseptics known, 1 in 5,000 entirely preventing fermentation. It has been recommended in skin diseases as a substitute for pyrogallic and chrysophanic acids, the Hydrochlorate being used.

Hydroxylamine Hydrochlorate.
NH₂OH, HCl.—Crystals, soluble in water and alcohol. It usually contains a small percentage of Ammonium Chloride to render it stable. When heated to 212° F. it melts and then explodes. A solution of 2 grains in 6 ounces of spirit and glycerine, equal parts, has been recommended for ringworm, sycosis, lupus, and psoriasis. It requires caution in its use, especially if the preparation be stronger than 1 per cent. It does not stain the skin.—*Ph. J.*, Dec. 1, '88; *C. & D.*, Mar. 23, '89; *K.*, Jan. '90. It is not well suited for private practice owing to its tendency to cause irritation and toxic symptoms, and the necessity of constantly watching for such symptoms.—*Ph. J.*, Mar. 29, '90.

HYMENODICTYON.

The bark of *Hymenodictyon excelsum* (*Cinchona excelsa*), Rubiaceæ, a tree common in Central India. It has bitter tonic and febrifuge properties, and is used as such by the natives. It contains a non-oxygenated alkaloid. *Hymeno-*

dictyonine, $C_{20}H_{20}N_2$, and a bitter neutral principle. Hymenodictyonine is constitutionally related to Pyridine.

HYOSCYAMINA.

Hyoscyamine. $C_{17}H_{23}NO_3$.—An alkaloid, isomeric with Atropine, occurring in *Hyoscyamus niger*, *Scopolia carniolica*, *Atropa Belladonna*, and other allied plants. Hyoscyamine and Atropine are readily convertible into one another.—*Ph. J.* June 16, '88. Hyoscyamine is the chief naturally existing base in the plants mentioned, and, if proper precautions be taken in extraction, the product is pure Hyoscyamine, otherwise, a mixture of alkaloids is the result. Duboisine, Daturine, etc., all isomeric with Hyoscyamine, are more or less mixtures of Hyoscyamine, Hyoscine, and Atropine.—*K.* July '90. (See also page 49.) Hyoscyamine occurs in masses of minute white crystals, slightly soluble in water, freely in spirit. It has mydriatic properties similar to Atropine, but greater, and acts as an antispasmodic in asthma, chorea, epilepsy, etc. Injected subcutaneously it acts as a hypnotic in insanity.

Dose— $\frac{1}{150}$ to $\frac{1}{45}$ grain; may be increased up to $\frac{1}{8}$ or $\frac{1}{4}$ grain or even more in acute mania.

Amorphous Hyoscyamine.—A dark brown extract-like substance. It is less costly than the crystallised form, and the dose is said to be about the same. Formerly it contained Hyoscine, but it appears now to consist of pure Hyoscyamine.

Hyoscyamiræ Sulphas, U. S. P.—In white granular crystals or powder freely soluble in water. *Dose*— $\frac{1}{150}$ to $\frac{1}{45}$ grain.

Injectio Hyoscyamiræ Fycedemica. Strength.—1 in 120. *Dose*—1 to 4 milles.

Hycedemic Tablets contain $\frac{1}{70}$ and $\frac{1}{45}$ grain each.

Hyoscyaminæ Hydrobromas.—*Dose.*
etc., similar to Sulphate.

Hyoscina, Hyoscine. $C_{17}H_{21}NO_3$.—A colourless syrupy fluid, maintained by some to be the principal, if not the entire, constituent of Amorphous Hyoscyamine. It is isomeric with Hyoscyamine and is contained in *Hyoscyamus niger* and *Duboisia myoporoides*. It occurs in the mother liquor from which Hyoscyamine has been crystallised. The name Hyoscine was formerly applied to a base, subsequently proved to be Tropine (see page 49). Hyoscine boiled with water splits up into tropic acid and pseudotropine. Only its salts are used medicinally.

Hyoscinæ Hydrobromas.—White crystals, freely soluble in water. *Dose*— $\frac{1}{50}$ to $\frac{1}{100}$ grain hypodermically; up to $\frac{1}{5}$ grain by the mouth. Very valuable in insomnia and mania, has no effect on the respiration. It must be distinguished from the Hyoscyamine salt. Locally it is a rapid and brief mydriatic. It is very apt to produce toxic symptoms; Pilocarpine, Caffeine, and stimulants are the best antidotes.

Also successful in delirium tremens, and local spasms in a child.—*Zts. J.* Sept. 28, '89.

The **Hydrochlorate** and **Hydriodate** are similar to the Hydrobromate, and given in the same doses.

Injectio Hyoscinæ Hydrobromatis Hypodermica.— $\frac{1}{2}$ per cent. *Dose*—1 to 2 minims.

Hypodermic Tablets contain $\frac{1}{50}$ and $\frac{1}{10}$ grain each.

Guttæ Hyoscinæ.—2 grains (Hydrobromate) to 1 ounce.

Liquor Hyoscinæ Hydrobromatis.—1 in 1,000 of Chloroform Water. *Dose*—3 to 15 minims.

A **Crystalline Hyoscine**, which has recently been announced, appears to be an oxid-

ised product ($C_{17}H_{21}NO_4$) obtainable from most of the plants mentioned.

HYPNAL.

Chloral-Antipyrin ; Trichloraldehyde-phenyl-dimethyl-pyrazole.— $C_{11}H_{11}N_2C_2Cl_3O$.—Obtained by mixing solutions of Chloral Hydrate and Antipyrin, and purifying the product which separates (see page 40). It is met with in colourless crystals, soluble in 6 times their weight of warm water, and free from odour or caustic taste.

Its action is that of Antipyrin and Chloral combined, that is, it is hypnotic and sedative. It is specially useful in insomnia caused by pain, as well as for relieving spasmodic cough.—*M. R.*, Oct. '90.

Dose—1 gramme (15½ grains).

HYPNONE.

—See page 3.

ICHTHYOL.

Sulpho-Ichthyolate of Ammonium.—A brownish bituminous substance, with a disagreeable tarry odour. Obtained from the oil distilled from certain fossil deposits containing fish,* and which occur in the Tyrol, by treating with Sulphuric Acid and neutralising with Ammonia. It contains about 15 per cent. of Sulphur. It is soluble in water, or a mixture of alcohol and ether.

A valuable remedy for acne, eczema, etc., applied as an ointment, 20 to 50 per cent., with Vaseline or Lanolin. In combination with Chrysarobin it has been successfully used for leprosy, an ointment containing 5 per cent. of

* Hence its name—*ἰχθύς* a fish.

each, with 2 per cent. Salicylic Acid being used. Internally it has been given for neuralgia, catarrh, rheumatism, and constipation, and very successfully in one case of diabetes.—*H.* July '90.

Dose—10 to 30 grains daily.

Capsules contain 4 grains each. *Dose*—1 or 2.

Collodium Ichthyol.—1 in 8.

Ichthyol Soap (superfatted) has been recommended for dermatitis arising from walking or horse-back riding.

The Ammonia combination as above is known as 'Ichthyol,' but other compounds, known respectively, as—

Lithii Sulpho-ichthyolas, Lithium-Ichthyol, and

Sodii Sulpho-ichthyolas, Sodium-Ichthyol, Natrium Sulpho-ichthyolicum—possess the same properties as Ichthyol, are given in the same doses, and used in the same manner.

Zinci Sulpho-ichthyolas, is only used externally.

Thiol, German Ichthyol.—An artificial representative of the natural Ichthyol, prepared from gas oil and sulphur. It is soluble in alcohol and ether, also in water, from which it is precipitated by acids. Ammonium and Sodium salts may be prepared, resembling the natural Ichthyol, and useful for the same purposes. Thiol is met with in two forms.—**Dry** (in black scales) and **Liquid**—the latter containing about 40 per cent. of the former, which may be prepared from it by evaporation. An ointment of Liquid Thiol, 1 in 8; also a dusting powder of Dry Thiol 1, with Starch 1, Oxide of Zinc 2, and Talc 16, have been used.—*C. & D.*, May 4, '89.

Dose of Dry Thiol—2 to 10 grains.

INULA, U. S. P.

Elecampane.—The root of *Inula Helenium* (Composite) contains the following principles:—

Inulin.—A body allied to starch. It is aromatic, tonic, stimulant, and expectorant, and has been used in dyspepsia, chronic pulmonary affections, etc. *Dose*—1 to 3 grains.

Helenin. $C_{16}H_{28}O$ —A stearoptene obtained from the root. In aicular crystals, nearly insoluble in water, freely soluble in alcohol. It is a very powerful antiseptic, 1 in 10,000 arresting putrefaction, and has been used for surgical dressings. Useful as a gargle for ozena, and said also to relieve chronic bronchitis. Internally it is used for malarial fevers and various forms of diarrhoea. It keeps away insects, especially mosquitoes. An oily solution has been found useful as a paint in diphtheria. Has also been found very valuable in phthisis.—*K. Jan.* '90.

Dose—½ to 2 grains.

Cruik Helenin is a mixture of two somewhat similar bodies, pure Helenin and Inula Camphor.

Alantol or Alant Camphor ($C_{10}H_{14}O$).—An aromatic liquid obtained from Elecampane. Its medicinal properties are similar to Helenin.—*Ph. J.* Apr. 2, '87.

Alantic Acid. $C_{15}H_{22}O_3$.—A white crystalline body, also obtained from Elecampane, soluble in alcohol, insoluble in water, but forms soluble salts with alkalies. A powerful antiseptic.

The above two bodies are obtained from the plant as a mixture which is said to be more powerful than Helenin as a remedy for tuberculosis.—*Ph. J.* Apr. 2, '87.

IODOFORMUM, B. P.

Iodoform. CHI_3 .—Prepared by the action of Iodine on an alcoholic solution of Carbonate of Potassium, or by acting upon Acetone

with Hypochlorite of Sodium in the presence of an Iodide.—*Ph. J.* Mar. 2, '89.

A yellow, minutely crystalline powder, or in crystalline scales, with a persistent disagreeable odour. This form is recommended for surgical purposes in preference to **Precipitated Iodoform**, which has a tendency to form clots; the latter is more suitable for ointments, insufflations, etc., being an impalpable powder. Insoluble in water, soluble in ether, chloroform, collodion, and oil of eucalyptus; about 1 in 100 of rectified spirit,* 1 in 30 of olive oil, 1 in 3 of bisulphide of carbon. Precipitated Iodoform sometimes gives a turbid solution in chloroform or carbon bisulphide, owing to adherent water.

Iodoform is widely used as a disinfectant, antiseptic, and anaesthetic. It is also used internally to relieve the pain of gout, etc. Combined with Cod Liver Oil it has been recommended for phthisis and scrofula. In ulcer of the stomach, given in conjunction with nutrient enemata, it stops the vomiting. $\frac{3}{4}$ grain, from 3 to 5 times daily, acts as an internal styptic in haemorrhage from the lungs.

Dose— $\frac{1}{2}$ to 3 grains.

Pilulae Iodoformi.—2 grains each.

As an external application Iodoform is largely used as an antiseptic dressing for wounds, and sores of all kinds, especially those of a syphilitic nature. In carbuncles an application of Iodoform and Oxide of Zinc twice daily, previously washing the part with Carbolic Lotion (*B. M. J.* Jan. 5, '89); or the subcutaneous injection of a concentrated ethereal solution at the base of the tumour (*B. M. J.* Mar. 2, '89), has been recommended as very valuable. Pure Iodoform may also be used as a snuff in nasal catarrh.

Various substances have been used to mask the disagreeable odour of Iodoform with more or

* If the spirit be saturated with camphor, 1 part of Iodoform may be dissolved in 10.

less success; Coumarin, Creolin, Eucalyptus, Musk, Balsam of Peru, etc., have all been used, and the balance of opinion appears now to be in favour of using odourless substitutes, as Aristol, Sozoiodol, Idol, etc. **Iodoformum Aromaticum** contains 2 per cent. of Coumarin (see page 100).

Iodoform has been known to cause eczema when used as a gauze or ointment, on an irritable surface.—*L.* April 6, '89.

Antidote.—Bromide of Potassium.—*T.* 6, Sept. '89.

Preparations of Iodoform

Suppositoria Iodoformi, B. P.—3 grains each.

Unguentum Iodoformi, B. P.—1 in 10.

Bougies of Iodoform (Nasal).— $\frac{1}{6}$ to $\frac{1}{2}$ grain in each, with Gelato-Glycerine (page 128).

Collodium Iodoformi.—5 grains in 1 drachm.

Insufflato Iodoformi.—(Throat.) Iodoform, 1 grain, Starch, 1 grain, (Ear.) Iodoform, 1, Subnitrate of Bismuth, 1. Antiseptic and mildly caustic.

Iodoform and Eucalyptus Bougies.

Iodoform, 5 grains; Oil of Eucalyptus, 10 minimis; Oil of Theobroma, 35 grains, to make a bougie 4 inch long, and the size of a No. 10 catheter. Used for acute gonorrhœa. The patient to empty his bladder and then lie on his back—a bougie is introduced and the orifice of the urethra closed by strapping. The bougie to be dipped in Eucalyptus or Carbolic Oil (1 in 20) before insertion. The patient to refrain from passing water for 4 or 5 hours, and, if the case be advanced, another bougie to be introduced after he next passes water. An antiseptic injection of Sulpho-Carbolate of Zinc, 2 grains to 1 ounce, to be also used 4 or 5 times a day, and on the third or fourth day, when the symptoms have subsided, an injection of Sulphate of Zinc, 2 grains to 1 ounce, to be used. The patient to abstain from

alcohol during the treatment. - *B. M. J.*, July 24 & 31, '80. The Bougies must be kept in cold water.

Iodoform Gauze. 20 per cent. Relieves the pain of burns, etc. Some samples of Iodoform Gauze rapidly acquire a greenish colour, due to liberation of Iodine and formation of Iodide of Starch. This is not an indication of impurity, but rather the reverse : impurities in Iodoform tend to retard its decomposition. - *Ph. J.*, Feb. 2, '89.

Iodoform Lint, 10 per cent., and **Wool,** 10 per cent., are also prepared.

Iodoform Wool, 50 per cent., is used for affections of the ear.

Pastillus Iodoformi. -1 grain each, for syphilitic eruptions of the mouth and chronic pharyngitis. See page 129.

Plaster Mulls contain 50 per cent.

Unguentum Iodoformi et Eucalypti. - 1 in 10 with Oil of Eucalyptus. Also made with Vaseline and termed **Iodo-Vaseline.** An ointment flavoured with **Rose** is also made, 5 grains to 1 ounce, for nasal affections.

Unguentum Iodoformi cum Atropina. - Iodoform, 60 grains, and Atropine, 2 grains, in 1 ounce of Vaseline.

Iodoformum Bituminatum. - A compound of Iodoform and Tar, occurring in transparent scales of a brown metallic colour, easily pulverizable, has been recently introduced. The combination with Tar diminishes the volatility of the Iodoform as well as disguises its disagreeable odour. It is useful as an application to ulcers, etc., being used for the same purposes as Iodoform.

IODOL.

Tetra-Iodo-Pyrrol. $C_4I_4N_2H$. - A brownish-coloured amorphous or finely crystalline powder prepared by precipitating Pyrrol (obtained

from animal oil) with Iodo-iodide of Potassium. Possesses the properties of Iodoform without its unpleasant odour or anaesthetic toxic effects. It contains about 90 per cent. of Iodine and is used like Iodoform for dressing ulcers, etc. Iodol is almost insoluble in water but soluble in glycerine, alcohol, ether, and fats. An ointment with Vaseline or a solution in Glycerine is useful for granular and chronic conjunctivitis, the latter preparation being also a good paint for diphtheria, and for discharges in the canal of the external ear.

Dose—1 to 3 grains.

Iodol has been successfully used for chronic bronchitis in place of Iodide of Potassium. The elimination of Iodine is slower and its effects more lasting.—*T. G.* Jan. '89.

Collodium Iodol. 1 in 12, is a good form of application.

Menthiodol. See page 185.

Sozoiodol. See page 270.

IODUM, B.P.

Iodine. I. A non-metallic element obtained chiefly from the ashes of sea-weeds, also manufactured from mineral iodides and iodates. In dark laminar crystals, with a metallic lustre and irritating odour, readily volatilising with heat, forming a beautiful purple vapour. Nearly insoluble in water, but rendered soluble by the addition of a soluble iodide; soluble in ether, chloroform, spirit, and bisulphide of carbon.

Iodine is employed as an antiseptic, alternative, rubefacient, and as a stimulant to the lymphatic system. In chronic inflammation, glandular enlargements and skin diseases it is a good application, as an inhalation or gargle it is used for bronchitis and throat affections. Applied to the abdomen it has been found useful in ascites.

Iodine applications have been found very efficacious in erysipelas, applied 3 or 4 times a day.—*L.* April 6, '89.

Dose— $\frac{1}{2}$ grain, gradually increased.

Antidotes.—Emetics; demulcent drinks; Morphine hypodermically to relieve pain.

The presence of free Iodine may be readily recognised by adding a few drops mucilage of starch; a deep blue colour is produced which disappears on boiling, and reappears on cooling if the liquid has not been boiled too long.

Incompatibles.—Metallic salts which form insoluble Iodides; Ammonia (decolorises); Alkaloids.

Iodine imparts to the skin a brown stain which may be removed by ammonia or hyposulphite of sodium.

Official Preparations—

Linimentum Iodi	..	..	..	1 in 8
Liquor Iodi	Lugol's solution with Iodide of Potassium	..	..	1 in 20
Tinctura Iodi	..	..	..	1 in 40
Unguentum Iodi	..	..	..	1 in 31
Vapor Iodi	..	..	..	1 to 8.

Unofficial Preparations—

Carbolised Iodine Solution.—See page 8.

Collodium Iodi.—30 grains to 1 ounce. The film formed by the Collodion not only protects the part but prevents the volatilization of the Iodine, thereby sustaining its action.

Glycerinum Iodi.—20 grains to 1 ounce. The skin does not harden or peel off by repeated applications of this pigment.

Iodo-Glycerine Solution (Morton's).—10 grains in 1 ounce, with Iodide of Potassium. For spina bifida, 30 minims to be carefully injected into the tumour.—*B. M. J.* '85, i. 1098.

Inhalatio Iodi cum Conio.—Vapor Iodi, B. P., with the addition of $\frac{1}{2}$ to 1 drachm *Succus Conii*.

Injectio Iodi Hypodermica Fortissima.—Contains $\frac{3}{4}$ grain Iodine in 1 minim. Dose—3 to 5 minims. for fibrous bronchocoele.

Oleum Iodi, Iodised Oil.—Non-irritant, does not stain, and is readily absorbed.

Papier Iodogène.—A French preparation consisting of paper impregnated with iodate and iodide of potassium and tartaric acid. On wetting the paper and applying to the skin, Iodine is liberated, which in its nascent state is believed to act more powerfully.—*Ph. J.* June 8, '89.

Iodised Phenol.—See page 8.

Pigmentum Iodi.—Iodine 2, Iodide of Potassium 1, Glycerine 4. To destroy vegetable parasites.

Pigmentum Picis cum Iodo (Coster's Paste).—Consists of Iodine 2 dr. dissolved in Light Oil of Wood Tar (*Ol. Picis Rect.*) 1 ounce. A chemical combination being formed, the irritating properties of free Iodine are got rid of. The paste may also be prepared from Creasote or *Huile de Cade*, but the resulting compounds are more irritating.

Directions.—Shake the bottle and apply with a stiff brush. After several days remove the scab which has formed, cleanse the part first with oil, and then with soap and warm water, dry, and apply more paste.

An excellent application for ringworm of the scalp.

Tinctura Iodinei (Edinburgh Pharmacopœia).—1 in 16. Not miscible with water. More useful than the *B. P.* Tincture as an application in many cases, the latter being more suitable for inhalation and internal use.—*Ph. J.* Nov. 16, '78.

Tinctura Iodi ætherea.—Same strength as *B. P.* Tincture, but made with Ether. See note, page 69.

Tinctura Iodi Decolorata, B. P. C.—In this the colour is discharged by means of *Liq. Ammon. Fort.* so as to render it more suitable

for exposed surfaces. Strength about the same as the *B. P.* Tincture. The same preparation, before being diluted with spirit, is known as **Tinctura Iodi Decolorata Fortior**. It is about 3 times as strong.

Amyli Iodidum, Iodised Starch, Amylum Iodatum, U. S. P.—Iodine 5, Starch 95. A deep blue-black powder. Used in place of Iodoform, also as an internal remedy for syphilis, the dose being pushed until free Iodine can be detected in the urine. Also in lupus erythematosus, and as an antidote for such poisons as alkaloids, sulphuretted hydrogen, ammonia, and caustic alkalies.

Pasta Amyli Iodidi.—For cleansing foul syphilitic and other sores.

Vapor Iodi Äthereus.—Contains Iodine, Ether, Creasote (or Thymol), Carbolic Acid, and Rectified Spirit. For respirators.

Iodised Wine.—.04 per cent. *Dose*— $\frac{1}{2}$ to 2 ounces.

Iodised Wool.—25 per cent.

Syrupus Acidi Hydriodicici, U. S. P..—Contains 1 per cent. of absolute Hydriodic Acid, H.I. *Dose*—20 to 40 minims. A mild preparation of Iodine.

Iodides.—See INDEX.

Liquor Calcis Iodinatæ.—A solution of a compound of Iodine and Lime, analogous to Liquor Calcis Chlorinatæ. It contains 16 grains Iodine to 1 ounce, and is colourless. On addition of an acid Iodine is liberated. It is used as a form for administering Iodine, and for applying externally. Also used, diluted, as a gargle. As a test for urine, it gives a red iodine colour with acid urine, and a white precipitate of phosphate of calcium with alkaline urine. *Dose*—5 to 20 minims.

Periodates (Weaver's).—A mixed product in white granular powder, consisting of several of the salts of Periodic Acid (HIO_4), slightly

soluble in water, from which morphine solution liberates Iodine. Recommended as an antiseptic and disinfectant, odourless and non-poisonous. In weak solution it destroys the cholera, typhoid, and anthrax bacilli. Has been used in a number of cases of zymotic disease with success, also in diarrhoea, purulent ophthalmia, and whooping cough, and has been suggested for consumption. Combined with a permanganate or perchlorate of sodium, the strength of the compound is increased.—*K.*, July, '90. *Dose*—5 to 10 grains, 3 or 4 times daily, before meals. The strength of external applications must be varied according to circumstances.

IPECACUANHA, B. P.

Ipecacuanha. The dried root of *Cephaelis Ipecacuanha* (Rubiaceæ), from Brazil. It is now being successfully cultivated on the Nilgiris.—*Ph. J.*, Dec. 15, '88. Its active ingredient is an alkaloid, *Emetin*; see page 168.

Ipecacuanha is diaphoretic and expectorant in small doses, and emetic in large doses. In dysentery it is largely used, given in doses of 30 to 40 grains. For this purpose a preparation, **Pulvis Ipecacuanhæ sine Emetina**, from which the alkaloid alone has been extracted, has been lately recommended in India, as acting equally well without causing nausea or vomiting. Further evidence is desirable regarding this preparation.—*M. R.*, Oct. '90.

A sample of this was prepared by the writer, and tried in 6 cases of acute dysentery by a Bombay physician, with most satisfactory results. In one case the liver and spleen were complicated. The usual depression, nausea, and vomiting were absent, and the stools assumed a semi-solid consistency tinged with bile, all symptoms of dysentery at length disappearing. Given in 20 grain doses thrice a day preceded by 30 minims Tincture of Opium, with a sinapism to the epigastrum : in one case (a Mahomedan female) 10

grains only, 3 times a day. No untoward symptoms were observed.—*M. R.* April '91.

Ipecacuanha may be combined with a Bromide or Chloral to send the patient asleep before nausea sets in.—*M. R.* Oct. '90.

Dose—As an expectorant, $\frac{1}{2}$ to 2 grains; as an emetic, 15 to 30 grains.

Applied as a poultice to the bites and stings of insects it allays the pain and irritation. A spray of the Wine has been recommended for chronic bronchitis and asthma.

Official Preparations

Pilula Ipecacuanhae cum Scilla. 1 of Opium in 23. Pulvis Ipecacuanhae Compositus (Dover's Powder) Opium 1, Ipecac.

1, in 10.

Trochisci Ipecacuanhae } grain each.

Trochisci Ipecacuanhae et Mor-

phine See page 190.

Vinum Ipecacuanhae 1 in 20.

Acetum Ipecacuanhæ, B. P. (Ad.), in 20, *B. P. C.* formula slightly modified. *Dose*—5 to 40 minims as an expectorant.

Syrupus Ipecacuanhæ Aceticus, B. P. C.. A syrup made from the above. *Dose*— $\frac{1}{2}$ to 2 drachms.

Emetina, Emetine, Emetia, $C_{20}H_{14}N_2O_5$ (?).—An alkaloid existing in Ipecacuanha to the extent of 1.0 to 1.5 per cent. A whitish amorphous powder, sparingly soluble in water, soluble in chloroform, spirit, and dilute acids. Applied locally it irritates the skin, producing pustules. Used as an emetic, etc. *Dose*— $\frac{1}{500}$ to $\frac{1}{6}$ grain as an expectorant; $\frac{1}{6}$ to $\frac{1}{3}$ grain as an emetic.

Emetine is a biacid base, probably a derivative of chinoline. It strikes an intense yellow colour with solution of chlorinated lime and acetic acid, a reaction which may be used as a test for the root.

A volatile base to the extent of 0·3 to 0·5 per cent. has also been found in the root.—*Ph. J.*, Dec. 29, '88; Nov. 2, '89.

Emetin.—An extractive substance, soluble in water, has properties like the root. *Dose*— $\frac{1}{10}$ to $\frac{1}{50}$ grain as an expectorant; $\frac{1}{2}$ to 1 grain as an emetic.

Trochisci Morphinæ et Emetin.— $\frac{1}{50}$ grain Morphine and $\frac{1}{50}$ grain Emetin in each.—*M.*

Emetin must be distinguished from *Emetine*.

Goanese Ipecacuanha.—The stem and roots of *Naregamia alata* (Meliaceæ), a plant common in Western India, and known by the Goanese as *Trifolia*. It is now being cultivated on the Nilgiris. It possesses emetic properties similar to those of Ipecacuanha, and has been used with great success in dysentery and as an expectorant. In Southern India it is used as a remedy for rheumatism and itch. Further trials of this drug have recently been made, the results of which are sufficiently satisfactory to encourage its further use.—*Ph. J.*, Dec. 15, '88. *Doses*—Same as Ipecacuanha. *Pg. Ind.* i. 333; *Ph. J.*, Oct. 15, '87.

The best preparations are a **Tincture** (1 to 8), given in doses of 5 to 20 minims as an expectorant, and 2 to 4 drachms as an emetic; and a **Liquid Extract**, in doses of 45 to 75 minims in water or Aqua Laurocerasi. *Naregamia* contains an alkaloid, *Naregamine*, which differs from Emetine in not giving any colour with chlorinated lime and acetic acid.—*Hooper*.

IRIDIN.

Irisin.—The brown powdered extractive from the root of blue flag, *Iris versicolor* (Iridaceæ). Has cathartic, alterative, and diuretic properties, and is given in biliary disorders. It is gentler in action than Podophyllin, and combined with Euonymin is a mild aperient and chol-

gogue. Also useful in vomiting of pregnancy. *Dose*—1 to 5 grains at bed-time, followed by a saline aperient in the morning.

JABORANDI, B. P.

Jaborandi : Pilocarpi Foliola.—The dried leaflets of *Pilocarpus pennatifolius* (Rutaceæ), from Brazil. A powerful sudorific and sialagogue; large doses contract the pupil of the eye. It has been successfully used in asthma, Bright's disease, diabetes, and as an antidote to Belladonna and Atropine, to which it is physiologically antagonistic. It also promotes the growth of the hair in alopecia, and is an ingredient in many hair-washes.

Jaborandi owes its activity to a liquid alkaloid *Pilocarpine*, $C_{15}H_{16}N_2N_2$ (see page 171), it also contains *Pilocarpidine*, $C_{16}H_{14}N_2O_2$ (which is supposed to be dihydroxylnicotine, as it differs from nicotine by two atoms of oxygen), *Jaborine* and *Jaboridine*. The last two are derivatives of Pilocarpine and Pilocarpidine respectively, and are antagonistic to them in action. Pilocarpidine and Pilocarpine have been synthetically prepared from pyridine.

Extractum Jaborandi, B. P. (Solid).—*Dose*—2 to 10 grains.

Extractum Jaborandi Liquidum, Liquor Jaborandi. Extractum Pilocarpi Fluidum, U. S. P.—Not miscible with cold water. *Dose*—10 to 60 minims in warm water.

Infusum Jaborandi, B. P.—1 in 20. *Dose*—1 to 2 ounces as a diaphoretic.

Tinctura Jaborandi, B. P.—1 in 4. *Dose*—30 to 60 minims. To check night-sweating, 5 to 20 minims, 3 times a day, or at bed-time.

Jaborandi acts in about 10 minutes, its action lasting 4 or 5 hours, while the body tem-

perature usually falls $0\cdot4^{\circ}$ to $1\cdot1^{\circ}$ F. The alkaloid injected hypodermically acts in 3 to 5 minutes. Jaborandi acts less easily on children than adults.—*Rung.*

Pilocarpina. Pilocarpine.—A colourless, liquid, odourless alkaloid, which is not used medicinally. It forms crystallisable salts with acids.

Pilocarpinæ Nitræ, B. P.—A white crystalline powder, freely soluble in water. Properties similar to Jaborandi. *Dose*— $\frac{1}{10}$ to $\frac{1}{2}$ grain by the mouth; $\frac{1}{6}$ to $\frac{1}{3}$ grain hypodermically.

Injectio Pilocarpinæ Nitratis Hypodermica.—1 grain in 20 minims. *Dose*—2 to 6 minims.

Hypodermic Tablets contain $\frac{1}{10}$, $\frac{1}{5}$, and $\frac{1}{2}$ grain each.

Guttæ Pilocarpinæ. 2 grains to 1 ounce. Used to contract the pupil.

Pilocarpinæ Hydrochloras, Pilocarpinum Hydrochloricum, P. G.—Freely soluble in water. *Dose*—Same as Nitrate.

Pilocarpine salts in large doses are powerfully diaphoretic, small doses ($\frac{1}{10}$ grain) check night-sweats. In kidney disease and dropsy small doses are sialagogue and diaphoretic. Also useful in intermittent fever, diabetes, severe hiccough (checked by $\frac{1}{2}$ grain) and syphilis.

$\frac{1}{2}$ grain Pilocarpine with stimulants acted as an efficient antidote to half an ounce of Belladonna Liniment, swallowed by mistake 4 hours previously.—*Ph. J. Mar. 1, '90.*

Pilocarpine has been recommended for puerperal mania.—*B. M. J. Apr. 6, '89.*

The Hydrochlorate in doses of $\frac{1}{2}$ and $\frac{1}{4}$ grain, hypodermically, proved of great value in Bright's disease. Infusion of Jaborandi was also useful but excited nausea.—*L. Dec. 22, '88.*

Pilocarpine is also very useful as a galactagogue.

$\frac{1}{2}$ or $\frac{1}{10}$ grain, hypodermically, gradually increased in some cases to $\frac{1}{2}$ grain, very useful in labyrinthine deafness.—*B. M. J.* Mar. 2, '89.

Pilocarpine is antagonistic to Salicin.—*Ibid.*

Reliable only in recent affections of the labyrinth.—*L. Jan. 3, '91.*

JAMBOLANÆ SEMINA.

Jambul.—The dried seeds of *Eugenia Jambolana* (*Syzygium Jambolanum*), Myrtaceæ, a tree very common in India. A remedy of old repute in India among native physicians, a decoction of the bark and a syrup from the ripe fruit being used as astringents in chronic diarrhoea and dysentery, as also in the form of astringent gargles, etc. Chiefly used for diabetes, it having the property of arresting the transformation of starchy matter into sugar, a fact which has been chemically demonstrated by Lascelles-Scott and Drs. Balfour and Woodhead.

Dose—5 to 40 grains or more.

Jambul appears to contain an unstable glucoside, *Jambulin*, to which the anti-diabetic effects of the seeds are due. This substance being very unstable, the necessity of using fresh seeds carefully dried is apparent, the seeds as obtained in the bazaar being usually quite inactive.

5 grains, 6 times a day, reduced the urine from 7 quarts *per diem* of sp. gr. 1.042 to 4 quarts, sp. gr. 1.020.—*B. M. J.* Mar. 19, '87. 2½ to 5 grains, thrice a day, very useful in diabetic ulcers.—*L. Oct. 8, '87.* 2 grains, 3 times a day, cured diabetes in 4 months.—*Pr. Dec. '88.*

A series of experiments on dogs in which diabetes had been induced by phloridzin showed that Jambul lessened the diabetes without any secondary effects.—*C. & D. July 20, '89.*

Chemical composition of Jambul. - See *Ph. J.*
May 5, '88.

Extractum Jambolanæ Liquidum.
Dose—1 to 2 drachms, 3 times a day.

Jambul and Gluten Biscuits, containing 30 grains in each, are also prepared. *Dose*—1 to 6 biscuits, 3 times a day.

JATAMANSI.

The rhizome of *Nardostachys Jatamansi* (Valerianaceæ), a Himalayan plant, contains a volatile oil possessing properties similar to Valerian, and is used in place of that drug for epilepsy, etc.

Dose—45 grains.

Oleum Jatamansi.—Used in the same manner as Oil of Valerian. *Dose*—2 to 6 minims.

JUGLANS, U. S. P.

Butternut; White Walnut.—The inner bark of the root of *Juglans cinerea* (Juglandaceæ). A mild cathartic, causing no griping, and useful in habitual constipation. Acts also as a hepatic stimulant.

Extractum Juglandis Fluidum.—Not miscible with water. *Dose*—1 to 2 drachms.

Juglandin.—The powdered Extractive. *Dose*—1 to 5 grains or more.

The walnut, *Juglans regia*, has been recommended as an antispasmodic and for checking the vomiting of pregnancy, and a spirit distilled from the nut, **Spiritus Nucis Juglandis**, is given for that purpose in doses of 1 to 4 drachms.—*M.*

KAIRIN.

Kairine; Oxychinoline-Ethyl Hydride. $C_{10}H_{14}NO$.—A synthetically prepared alkaloid, the **Hydrochlorate** of which is used

in medicine. In white crystals, soluble in water, and having a bitter nauseous taste. It is a powerful antipyretic, but its nauseous taste has caused it to give place to other antipyretics.

Dose—5 to 15 grains.

KALADANA, P. I.

The seeds of *Pharbitis nil* (*Ipomoea hederacea*, Convolvulaceæ), a plant common throughout India. They possess properties similar to Jalap, for which they have been used as a substitute. Kaladana contains a Resin (*Pharbitisin*) similar to Resin of Jalap, given in doses of 4 to 8 grains.

—K. July '90.

A Tincture, Extract, and Compound Powder are also official in the *P. I.*, and are intended to take the place of similar *B. P.* preparations of Jalap, but the Resin is the most satisfactory preparation.

KAOLIN.

China Clay: Porcelain Clay.—A Silicate of Aluminum which occurs naturally in some parts of England. When finely ground and purified it forms a useful absorbent dusting powder for infants and irritable skins. It is also used along with Paraffin as an excipient for pills which contain such salts as Permanganate of Potassium, etc.

Unguentum Kaolin.—1 in 3. Alleviates irritation if applied to abraded skin.

Cimolite, Terra Cimolia or White Fuller's Earth.—A natural variety of steatite, composed chiefly of Silicate of Magnesium.

Thymolite.—A similar preparation containing Thymol, used as an application for prickly heat in India.

Other Dusting Powders.—

Calamina Praepirata.—See page 299.

French Chalk.—A natural Silicate of Magnesium which forms a soft unctuous powder.

Talc and Venetian Tale.—Another Silicate of Magnesium, softer than French Chalk. The second variety is preferred.

Fuller's Earth.—A Silicate of Aluminium, similar to Kaolin, but less pure. It is usually of a greyish colour.

Kieselguhr, or White Peat, is a diatomaceous earth, consisting of almost pure Silica, the ash of which forms a very light and absorbent powder.

Lycopodium, the spores of a club-moss, is also used. See page 181.

Oleate of Zinc.—See page 201.

Oxide of Zinc.—See page 300.

Pelliculine Powder.—A proprietary preparation, having as a basis finely powdered Boric Acid, and agreeably perfumed. Very pleasant to use, and has the advantage of being soluble.

Salicylated Tale.—See page 17.

Stearate of Lead.—See page 201.

Violet Powder, if procured from a reliable source, consists of pure Starch, perfumed. There are many inferior preparations in the market.

KAVA-KAVA.

The root of *Piper methysticum*, Polynesian Islands. Used by the natives as a salagogue and for making an intoxicating drink. It contains two resins (α and β), which are believed to be the active principles, an essential oil, and a neutral crystalline principle (about 1 per cent.) named *Kavalin* or *Methysticin*, allied to Piperine. An alkaloid, *Kavaïne*, has also been separated.—*E. B.* '89, 131.

A bitter tonic, stimulant, and diuretic, and has been highly recommended for gout and gonorrhœa, as being more palatable than Copaliba or Santal Oil. It is a local anaesthetic to the eye and tongue.

Dose—5 to 10 grains.

Extractum Kava-Kava Liquidum.—Not miscible with water. *Dose*—15 to 60 minims.

KARIYAT (KREAT).

Andrographis, P. I. The dried stalks and root of *Andrographis paniculata* (Acanthaceæ), a plant common in India. A bitter tonic and stomachic, similar to Quassia and Chiretta. The juice of the fresh leaves is used by natives as a remedy in bowel complaints of children. The preparations mentioned below are useful in debility and convalescence, also in the advanced stages of dysentery.

Infusum Andrographis Compositum, P. I.—1 to 20. *Dose*—1½ to 2 ounces.

Tinctura Andrographis Composita, P. I.—3 in 20. *Dose*—1 to 4 drachms.

Succus Andrographis Concentratus.—The expressed juice of the fresh herb, concentrated *in vacuo*, so that 1 part represents 4 parts herb. *Dose*—10 to 60 minims.

Halviva, a proprietary tonic, is a preparation of this drug, and not of Chiretta as some have stated.

KERATIN.

A substance prepared from animal horns by treatment with pepsin and ammonia. It is used for coating pills that are desired to pass into the intestine unchanged, so that the action may be localised. It is insoluble in the acid gastric juice, but soluble in the alkaline liquid of the intestine. See also **Pills** (page 311).

KOLA.

The seeds of *Sterculia acuminata* (*Cola acuminata*), Sterculiaceæ, of Western Africa. They contain 2·13 per cent. of Caffeine and 0·2 per cent. of Theobromine. Act as a stimulant to the nervous system, warding off fatigue and de-

pression. Also used for chronic diarrhoea and dipsomania.—*K.*, July '90. An efficient remedy in sea-sickness.—*B. M. J.*, May 10, '90. In a report of experiments made with Kola at the Mian Mir Camp of Exercise, January, 1889, it was shown to be an efficient stimulant to the nervous system, and might be used as a substitute for tea or coffee, especially where there is diarrhoea: also that care must be taken to exclude the seeds of *Sterculia cordifolia* or *Garcinia Kola* which contain no Caffeine.—*P.*, July '89.

Kola Cordial.—For sea-sickness. *Dose*—A teaspoonful frequently.

Kola Chocolate.—A substitute for ordinary chocolate, specially adapted for invalids.

Kola Wine, Kola Cocoa (Kolatina), etc., are also prepared.

LANOLINUM.

Lanolin; Adeps Lanæ Hydrosus. B. P. (Ad.) ; Hydrous Wool-Fat; Agnine.

The purified cholesterol fat of sheep's wool, mixed with 40 per cent. of water. Liebreich has found it in human skin and hair as well as in the feathers of fowls and various parts of other animals. For a description of the various processes of manufacture, see *J.S.C.I.* Apr. '90. It is a yellowish, tenacious, unctuous substance, neutral, odourless, does not become rancid, and will take up several times its weight of water, but is not miscible with glycerine. As a basis for ointments it is unequalled, owing to the readiness with which it is absorbed into the skin. Iodine, for instance, has been found in the urine three minutes after application with Lanolin. In all cases where it is desirable that the medicament should be rapidly and completely absorbed this basis should be used.

With the addition of 4 per cent. of Cocaine it forms a good application for burns and scalds,

relieving the pain and protecting the surface from the air.

Lanolinum Hydrargyri.—A strong mercurial ointment prepared with Lanoline.

Sapolanolin.—A mixture of Lanolin and Soft Soap, recommended for eczema.

Lanolin Ointment Base.—Lanolin 3. Vaseline 1. Smooth, non-sticky, and much more convenient for use than plain Lanolin.

Lanolin Soap, Cream, and Pomade are also prepared.

Lanolin forms the basis of several proprietary preparations, as **Vinolia**, **Pelliculine**, etc., which are useful emollient preparations for the skin.—*M. R.* Oct. '90.

Adeps Lanæ, B. P. (Ad.). Wool-Fat, Anhydrous Lanolin.—This is the purified fat of sheep's wool, *without* the addition of water. A translucent, brownish substance, preferred by some for application to moist surfaces, such as the mucous membrane of the mouth, nares, anus, etc.

Lanesin.—A wool-fat recently introduced, prepared by a process differing from that by which Lanolin is prepared. —*Ph. J.* July 28, '88.

LEPTANDRIN.

A resinoid powder obtained from Leptandra, U. S. P. or Culver's Root, *Leptandra virginica* (*Veronica virginica*), Serophulariaceæ. A dark greenish-brown powder. Aperient and chalagogue, useful in bilious headache, especially if combined with Podophyllin. Useful also in dyspepsia, diarrhoea, etc. It does not irritate the bowels.

Dose.—} to 2 grains; may be increased to 4 grains in chronic cases.

LINTEUM.

Lint.—Linen cloth, the surface of which has been prepared so as to render it soft and woolly for application to wounds, etc. It is preferred in many cases to cotton as being a superior dressing, and less irritating.

Lint is medicated with Boric Acid (page 4), Carbolic Acid (page 7), Corrosive Sublimate (page 147), Eucalyptus (5 per cent.), Iodoform (page 162), Salicylic Acid (page 17), and Thymol (5 per cent.).

Paper-Fibre Lint. Recommended for surgical and dental purposes, and to be used in place of piline tissue.

LIPANIN.

A straw-coloured oil containing 6 per cent. of free Oleic Acid. It has an oleaginous taste, and has been used in Germany as a substitute for Cod Liver Oil, being said to be more readily emulsified and assimilated. *Ph. J.*, Sept. 1, '88.

Dose.—One drachm to 1 ounce in emulsion, 3 times daily.

LITHIUM.

Lithium salts possess several advantages over the corresponding salts of Potassium and Sodium. Lithium having a low atomic weight, its salts contain more of the acid radicle in a given weight, and are consequently preferable in some cases.

Lithii Benzoas, U. S. P. $LC_7H_5O_2$.—Soluble 1 in 4 of water. Used as an antilithic. *Dose*—10 to 30 grains.

Lithii Bromidum, U. S. P. LBr .—Very soluble in water. Contains much more Bromine than Potassium Bromide, and has consequently a greater effect as a hypnotic; also used for epilepsy. *Dose*—5 to 15 grains.

Lithii Carbonas, B. P.; L, CO₂.—*Dose*—3 to 10 grains. Soluble in water charged with Carbonic Acid gas, forming.

Liquor Lithiæ Effervesens, B. P., Aerated Lithia Water.—5 grains to each bottle.

Lithia Water and Arseniate of Soda.—This has been very strongly recommended as a cure for diabetes, and has for some time past been extensively used here for that purpose. One bottle (containing 5 grains Lithiæ Carb. and $\frac{1}{2}$ grains Sod. Arsen.) is to be taken 2 or 3 times a day with meals.

Lithii Citras, B. P. L₂C₃H₅O₇, 4H₂O.—Soluble in water. *Dose*—5 to 10 grains.

Granular Effervescent Citrate of Lithium.—Contains 1 in 30. *Dose*—1 or 2 drachms.

Lithii Guaiacas.—A scale preparation containing one part Lithia and three of Guaiacum Resin. Given for chronic gout and rheumatism. *Dose*—5 grains twice a day.

Lithii Hippuras.—In small white crystals, freely soluble in water. Useful in gout and rheumatism, being a solvent of lithates. *Dose*—5 to 20 grains.

Lithii Salicylas, U. S. P.—Soluble 1 in 1 of water. Given for gout and rheumatism. *Dose*—5 to 20 grains.

Granular Effervescent Salicylate of Lithium.—Contains 1 in 30. *Dose*—1 or 2 drachms.

Lithii Sulpho-ichthyolas.—See page 158.

LUPULINUM, B. P.

Lupulin; Glandula Lupuli.—The glandular powder from the strobiles of the Hop, *Humulus Lupulus* (Urticaceæ). Tonic, stomachic, and aromatic, and useful in nervous affections.

tions. It is anaphrodisiac and beneficial in alcoholism and insomnia. *Dose*—2 to 5 grains.

Oleo-Resina Lupulini, U. S. P.—Extracted by means of ether. *Dose*—2 to 5 grains.

Tinctura Lupulini. 1 in 8. *Dose*—10 to 60 minims.

LYCOPodium, U. S. P.

Clubmoss Spores.—The spores of the common clubmoss, *Lycopodium clavatum* (Lycopodiaceæ). A light, yellowish powder, very mobile and repellent of water. It is used as a dusting powder for the skin, also as a pill excipient, and as a powder for sprinkling hygroscopic pills.

Tinctura Lycopodii. 1 in 10, the Lycopodium being first treated with ether. Has been found very valuable in nocturnal enuresis. *Dose*—15 minims to 1 drachm.

MAIDIS STIGMATA.

Stigmata of Maize; Corn Silk.—The green stigmata of *Zea Mays* (Graminaceæ). They are demulcent and diuretic, and are recommended for affections of the kidneys and bladder. Valuable in cases of uric or phosphatic gravel, also in chronic but not acute cystitis.—*J. Sept. 24, '87.*

Extractum Maidis Stigmatum Liquidum.—Miscible with water. *Dose*—1 to 2 drachms.

MALTUM, U. S. P.

Malt; Byne.—The dried seed or grain of barley, *Hordeum distichum* (Graminaceæ), in which the process of germination has been started by artificial means. Malted Barley contains a

ferment, *Diastase*, which enables it to convert starch into dextrin and maltose. This property renders it very useful in the digestion of starchy foods. It may be added to such foods as porridge, arrowroot, bread, etc., in the form of Powdered Malt.

Dose—1 to 2 drachms.

Infusum Malti.—3 in 7. *Dose*—2 to 4 drachms.

Infants' Foods consist essentially of baked wheaten flour mixed with various proportions of Malt.

Extractum Malti, U. S. P.. Extractum Rynes, Malt Extract. An aqueous extract of Malt. Contains dextrin, maltose, and diastase. The diastatic property is destroyed if exposed to a temperature above 150° F. Given in wasting diseases, weak digestion, and debility of all kinds. *Dose*—1 to 4 drachms.

Extract of Malt, if of good quality, should convert its own weight of arrowroot starch into dextrine and sugar in from 10 to 15 minutes, at a temperature of 100° F. (See page 320.)

Extractum Malti cum Oleo Morrhuae. Contains 30 per cent. of Cod Liver Oil. *Dose*—1 to 4 drachms.

Malt Extract is combined with Iron, Hypophosphites, Pepsine, Chemical Food, Citrates of Iron and Quinine, Phosphorus, Sherry Wine, etc.

Dry Extract of Malt, a brownish white powder, has been introduced. It requires careful storing in air-tight bottles, otherwise it does not keep well in a tropical climate.

Malt Extract makes a good emulsion with castor oil in the presence of water, forming a palatable mixture.

MANACA.

Mercurio-Vegetal.—The root bark of *Franciscea uniflora* (Serophulariaceæ). Highly recommended for syphilis and rheumatism. It excites the lymphatic system, eliminating mor-

bad matter from the blood by the skin and kidneys. Very useful in both chronic and acute rheumatism. It occasionally produces headache, but this soon ends in profuse perspiration and sleep.

Extractum Manacæ Liquidum.—*Dose*—5 minims, gradually increased to 1 drachm.

MANGANESE.

Manganese, Mn.—The following Manganese salts are in use medicinally:—

Manganesii Hypophosphis, $MnP_2H_6O_5 \cdot H_2O$. —A pale pink granular powder, soluble in water. *Dose*—1 to 10 grains.

Manganesii Oxidum Präparatum.—Black Oxide of Manganese (MnO_2), treated with Hydrochloric Acid and washed. Used in gastralgia and amenorrhœa in which it is said to be preferable to Permanganate of Potassium. *Dose*—10 to 30 grains.

Manganesii Phosphas, Manganous Phosphate, $Mn \cdot P_2O_5 \cdot 7H_2O$. —A white powder, insoluble in water. *Dose*— $\frac{1}{2}$ to 1 grain, dissolved in Syrup of Phosphate of Iron (see page 124).

Manganesii Sulphas, Manganous Sulphate, Mangani Sulphas, U. S. P. $MnSO_4 \cdot H_2O$. —A white or pinkish powder, also in large crystals. Freely soluble in water. Acts as a tonic and purgative, but is not largely used. *Dose*—1 to 5 grains as a tonic; 30 to 60 grains as a purgative.

MEAT.—See page 70.

MENISPERMIN.

The powdered extractive prepared from Canadian moonseed or yellow parilla, *Menispermum canadense* (Menispermaceæ). Tonic, laxative,

alterative, and diuretic, employed in dyspepsia and general debility. It stimulates the intestinal glands, but not the liver.—*Rutherford.*

Dose—1 to 5 grains, in pill, thrice daily.

MENTHOL, B. P.

Menthylic Alcohol; Peppermint Camphor. $C_{10}H_{19}HO$. —A crystalline stearoptene obtained by cooling the oil distilled from *Mentha arvensis*, vars. *piperascens et glabrata*, and from *Mentha piperita* (Labiatae), imported from Japan. It melts about 109° F., and is entirely volatilised by the heat of boiling water. An American variety known as **Pipmenthol** has a lower melting point. Soluble in glycerine, spirit, ether, oils, etc.; sparingly soluble in water, but imparting to it the odour and taste of peppermint. The Japanese Menthol is frequently adulterated with sulphate of magnesium, the crystals of which it resembles, the latter, however, is non-volatile and soluble in water.

Externally it acts as an antiseptic, and also relieves the pain of neuralgia, headache, and rheumatism. For this purpose it is largely used in the form of **Menthol Cones** or **Pencils**, which are gently rubbed on the painful part. These may sometimes be advantageously combined with Aconitine, 1 in 300, 400, or 500. Menthol forms liquid combinations with Thymol, Phenol, Camphor, Chloral, and Croton Chloral, and these fluids applied on cotton wool are useful for relieving toothache in decayed teeth.—*M.* A snuff, consisting of Menthol, Boric Acid, and Ammonium Chloride, is recommended for nasal catarrh. A solution (20 per cent.) in Olive Oil is also recommended as an injection for the larynx in laryngeal diseases.

Internally it has been given in doses of 5 to 20 grains for neuralgia and migraine.—*Ph. J.* July 27, '89. It stimulates the cardiac action without increasing its rapidity, and raises the

arterial blood-pressure. *B. P.* *Dose* — $\frac{1}{2}$ to 2 grains.

Emplastrum Menthol, B. P. (Ad.).

Contains Menthol, 1 in 5, with Yellow Wax, and Resin. Used as an application where the sustained action of Menthol is required.

Gossypium Menthol, Menthol Wool, 10 percent. Used to plug the nostrils in catarrh.

Menthiodol. A combination of Menthol and Iodol in the form of cones or pencils, for neuralgia.

Linimentum Menthol. Consists of Menthol 3, Chloroform 1, and Olive Oil *q.s.* to 16, and is useful in neuralgia, lumbago, and sciatica.

Mentholeate. A strong solution of Menthol in Oleic Acid. One of the best forms for outward application.

Tinctura Menthol Ætherea. —1 in 8. The evaporation of the ether produces an agreeable coldness, which supplements the action of the Menthol, and its quick evaporation allows the application of a succession of coats, leaving the Menthol in a finely divided condition upon the skin. *M. R.* Sept. '90. See note, page 69.

Safrol. $C_{10}H_{16}O_2$. The liquid stearoptene of oil of Sassafras, *Sassafras officinale*.

Lauraceæ. It has been used internally for headache, sciatica, etc., in the same manner as Menthol. *Dose* 20 to 30 minims.

Chinese Oil of Peppermint, the first mentioned of the sources of Menthol, is largely used in this country in place of the English oil.

Oil of Peppermint has been found to act as an excellent antiseptic, especially in phthisis and diphtheria. *L.* Mar. 17 & 24, '88.

METALDEHYDE. See p. 209.

METHACETIN.

Para-acet-anisidin; $C_6H_4OCH_3NH.C_2H_3O.$ —A

new antipyretic. Like Phenacetin it is derived from amido-phenol, but contains a methyl group in place of the ethyl group.*

A slightly reddish, odourless, crystalline powder, with a bitter saline taste. Slightly soluble in cold water, more so in hot water, freely soluble in alcohol and glycerine. It may be readily distinguished from Phenacetin by its physical properties, and also by the following test :—Heated with a quantity of water insufficient for solution, Phenacetin retains its original form, while Methacetin melts and solidifies again on cooling.

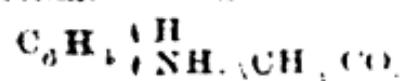
Action similar in many respects to Phenacetin. The abatement of temperature is gradual and lasts some hours; perspiration is copious. In non-feverish persons, however, neither sweating nor fall of temperature has been observed. In one case collapse set in, otherwise no disagreeable after-effects have been noticed.—*C. & D.*, Apr. 20, '89.

Dose.—3 to 8 grains. Its solubility and rapid absorption suggest the necessity for great caution in the experimental use of so powerful a substance.—*Ph. J.*, Apr. 27, '89. The dose should never exceed one-fifth that of Antipyrin.
H., July '90.

METHYL CHLORIDUM.

Chloride of Methyl. CH_3Cl . A colourless gas with a characteristic odour, prepared by distilling Trimethylamine Hydrochloride from the trimethylamine obtained as a residual product in the manufacture of alcohol from beet-root molasses which yields Ammonia and Methyl

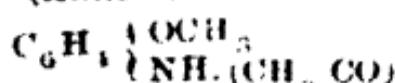
* The relation between Antifebrin, Phenacetin, and Methacetin is as follows :



Acetanilid. (Antifebrin.)



Phenacetin.



Methacetin

Chloride. The ammonia is separated by passing through acid, and the Methyl Chloride which passes over is washed and liquefied by cold and pressure. It is prepared in Paris and supplied in cylinders for use as a refrigerant and local anaesthetic.

When applied as a spray to any part of the body, the rapid evaporation of the liquefied gas produces intense cold. In this way it is used in neuralgia, sciatica, for minor operations, and also for freezing histological specimens previous to section cutting.

The spray is applied from the cylinder in various ways. The cylinders are supplied with a regulating nozzle and pulveriser, from which the Methyl Chloride may either be sprayed direct on the surface, or transferred to a thermo-isolator from which tampons may be soaked and applied to the part by means of vulcanite holders. - *Ph. J.*, Sept. 28, '89.

The spray should be applied obliquely to the surface, and care exercised in its use, otherwise it may cause blisters or eschars. Painting the surface with glycerine is said to prevent these ill-effects. - *T. G.*, Feb. '89.

Has been used successfully in a number of operations, including phymosis, strangulated hernia, etc. - *T. G.*, Oct. '90; *Ed. M. J.*, Dec. '90.

METHYLAL.

$\text{CH}_2(\text{OCH}_3)_2$. -The di-methyl ether of Methylenic Alcohol. A colourless volatile liquid, boiling at 107° F., with an odour resembling a mixture of chloroform and acetic ether, freely soluble in water and alcohol. Used as a hypnotic and anaesthetic. Internally, it is given to promote sleep, and the vapour mixed with that of ether has been suggested for use in place of chloroform. It is not fitted for subcutaneous use. Externally, it may be applied as a 10 to 15 per cent. solution in oil, or as an ointment of similar strength. It is an antidote to strychnine.

Dose—15 minims to 2 drachms. It is not a very satisfactory hypnotic.—K. Jan. '90.

Methylal has recently been recommended as a solvent for the odorous principles of flowers in the manufacture of perfumery.

METHYLENE.

Bichloride of Methylene.—A colourless ethereal liquid, with a chloroform-like odour, is sold as an anaesthetic under this name. It has been recommended as an anaesthetic in place of chloroform or ether, being said by some to be more rapid in its action and perfectly safe.—*L.* '72, i. 671 : *B. M. J.* '88, i. 1211.

It is considered to be merely a mixture of chloroform and alcohol, and is not less dangerous than chloroform. The real Bichloride of Methylene (CH_2Cl_2) does not produce anaesthesia, but causes convulsions. (*Rogg. (Dr. Burton.)*)

Contains a variable quantity of chloroform and therefore not safe. The A. C. E. Mixture (page 80) is recommended in preference.—*Quain's Dict. Med.*, p. 44.

METHYLENE BLUE.

—See page 35.

MOLLIN.

—See page 260.

MORPHINA, U. S. P.

Morphine; Morphia. $\text{C}_{17}\text{H}_{19}\text{NO}_3\cdot\text{H}_2\text{O}$.—The principal alkaloid obtained from Opium, in which it exists to the extent of about 10 per cent. In transparent crystals or white crystalline powder, bitter in taste, insoluble in water and ether, soluble in oleic acid and most alkalies, and forms crystalline salts with acids.

Action similar to Opium and Morphine salts, &c., it diminishes pain, induces sleep, and arrests secretions, except that of the skin, which it promotes. Requires great care in administering to children.

Dose— $\frac{1}{10}$ to $\frac{1}{2}$ grain. Large doses are tolerated by persons addicted to its use.

Antidotes.—Emetics; stimulants; compelled exertion, and artificial respiration; Nitrite of Amyl; Strychnine; Pierotoxin.

Owing to its insolubility, Morphine is usually given in the form of a salt as the Hydrochlorate or Acetate, 3 parts of Morphine being equal to 4 of ether of these salts.

Incompatibles.—Perchloride of Iron; Tannin.

Oleatum Morphinæ.—1 grain in 1 drachm. A useful local application for the relief of pain. See page 199.

Salts of Morphine.—

Morphinæ Acetas, B. P.—A white amorphous powder, soluble 1 in $2\frac{1}{2}$ of water if recently made. Spoils by keeping.* Has been recommended for diabetes in place of Codeine. *Dose*— $\frac{1}{8}$ to $\frac{1}{2}$ grain.

Injectio Morphinæ Hypodermica, B. P.—1 gr. (Acetate) in 10 minimis. *Dose*—1 to 5 minimis.

Injectio Morphinæ et Atropinæ Hypodermica.—See page 50.

Liquor Morphinæ Acetatis, B. P.—1 per cent. *Dose*—10 to 60 minimis.

Pastils of Morphine in combination with **Bismuth** (page 57), **Cocaine** (page 92), etc. See **Pastils**, page 129.

Morphinæ Hydrobromas.—A white amorphous powder, soluble in water. Said to have the advantage over other salts of Morphine of not affecting the head. *Dose*— $\frac{1}{8}$ to $\frac{1}{2}$ grain.

Morphinæ Hydrochloras, B. P.—The most generally used salt of Morphine. In amorphous white powder, or silky crystals, soluble 1 in 24 of water. It is perfectly stable. *Dose*— $\frac{1}{8}$ to $\frac{1}{2}$ grain.

* If 20 grains require more than 1 drop of Acetic Acid to form a clear solution in 1 drachm of water, the salt is unfit for use. *B. P.*

One grain of Hydrochlorate of Morphine is equal to $9\frac{1}{2}$ grains Opium, 8 grains Powdered Opium, $4\frac{1}{2}$ grains Extract of Opium, 117 minims Tincture of Opium.—*Sq.*

Preparations.—

Liquor Morphini Hydrochloratis, B. P.	... .1 in 100.
Suppositoria Morphini, B. P.	... $\frac{1}{2}$ grain each.
Suppositoria Morphini cum Sapone, B. P.	... $\frac{1}{2}$ grain each.
Tinctura Chloroformi et Morphine, B. P.	... (See page 81.)
Trochisci Morphinae, B. P.	... $\frac{1}{3}$ grain each.
Trochisci Morphinae cum Emetin	... (See page 169.)
Trochisci Morphinæ et Ipecacuanhae, B. P.	... $\frac{1}{5}$ gr. with $\frac{1}{2}$ gr. Ipecac. in each.

Morphinæ Lactas.—A white crystalline salt, soluble 1 in 8 of water. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Morphinæ Meconas.—The form in which the alkaloid exists in Opium. Occurs in white needles, soluble 1 in 34 of water. It is said to be less disagreeable in its effects than the other Morphine salts. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Liquor Morphinæ Bimeconatis, B. P.— $\frac{1}{2}$ per cent., being about the same strength as Tincture of Opium. *Dose*—5 to 50 minims.

Hypodermic Tablets contain $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$ grain each.

Morphinæ Phthalas.—In glassy scales, soluble 1 in 5 of water; keeps well in solution. It has been recommended as the most suitable of the Morphine salts for hypodermic injection, no acid being required for its solution. 100 grains of the Hydrochlorate and of the Acetate are equal respectively to 98 and 92 grains of the Phthalate. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Morphinæ Sulphas, B. P.—In white acicular crystals, soluble 1 in 20 of water. It

is the salt most generally used in the United States. *Dose*— $\frac{1}{8}$ to $\frac{1}{2}$ grain.

Liquor Morphinæ Sulphatis, B. P. Ad.—1 per cent. *Dose*—10 to 60 minims.

Hypodermic Tablets contain $\frac{1}{2}$, $\frac{1}{8}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$ grain; also with **Atropine**, $\frac{1}{40}$, $\frac{1}{20}$, $\frac{1}{30}$, $\frac{1}{15}$, $\frac{1}{10}$, and $\frac{1}{5}$ grain respectively.

Morphinæ Tartras.—A white powder, soluble 1 in 10 of water. Has been recommended for hypodermic injection (1 grain in 12 minims). *Dose*— $\frac{1}{4}$ to $\frac{1}{2}$ grain.

Apomorphine. See page 42.

Other Opium Alkaloids.

Codeina. See page 94.

Narceina. Narceine. White silky acicular crystals, neutral, taste slightly bitter. Soluble 1 in about 400 of water, soluble in alcohol, insoluble in ether. Has been recommended as a hypnotic, causing no constipation and less headache and perspiration than Morphine. *Dose*— $\frac{1}{2}$ to $\frac{1}{2}$ or 1 grain.

Chemistry of Narceine, see *Ph. J.*, xix., 1034; xx., 335, 401, 481.

Narcotina. Narcotine. White crystals, insoluble in water, soluble in chloroform and benzene. It possesses antiperiodic properties, and has been used in India for ague, being considered second only to quinine. *Dose*—1 to 5 grains.

Papaverina. Papaverine. Colourless crystals, insoluble in water, slightly in alcohol and ether. Used as a narcotic, being said to be free from such effects as headache or giddiness. It contracts the pupil. *Dose*— $\frac{1}{12}$ to $\frac{1}{2}$ grain.

The Opium poppy (*Papaver somniferum*) is cultivated in India, chiefly in Bengal and Malwa. Opium (*Appo*), Morphine salts, and Codeine are manufactured from it. —*Pg. Ind.*, i. 73 to 108.

**MORRHUÆ
B. P.****OLEUM.**

Cod Liver Oil. The oil expressed from the fresh liver of the cod, *Gadus morrhua*.

Dose—1 to 8 drachms.

Contains free fatty acids, phosphates, bromine, and iodine, also two bases, *Aselline* ($C_{25}H_{32}N_4$), and *Morrhaine* ($C_{19}H_{27}N_3$), and *Morrhuate Acid*. Morrhaine acts as an appetiser, diuretic, and diaphoretic, while Morrhuate Acid exists in the oil as a complex unstable compound, behaving like ordinary lecithin in yielding phosphoric acid on treatment with acids or alkalies. The oil also contains several volatile bases, *Butylinine*, *Anigminine*, etc. *Ph. J.* Nov. 3, & Dec. 1, '88.

Oleum Morrhuae cum Æthere. See page 22.

Oleum Morrhuae cum Creasoto. Contains 0·125 per cent. of Creasote with Saccharin. The Oil is thus rendered more agreeable. *Dose*—1 to 4 drachms; children in proportion.

Cremor Eucalypti Compositus.—See page 112.

Emulsio Olei Morrhuae, B. P. C. Contains 50 per cent. of Cod Liver Oil. May also be combined with **Hypophosphite** or **Lactophosphate of Calcium**. *Dose*—2 to 8 drachms.

Extractum Malti cum Oleo Morrhuae. See page 182.

Oleum Morrhuae Phosphoratum $\frac{1}{100}$ grain Phosphorus in each drachm. See page 220.

Morrhuol.—A bitter, aromatic liquid obtained from Cod Liver Oil by treatment with alcohol. It is said to contain the combination of Phosphorus, Bromine, and Iodine as met with in the Oil, 1 part of Morrhuel representing 20 parts of Oil.

Supplied in capsules each containing 0·2 grammie (3 grains). *Dose*—One or two capsules.

MUDAR.

Calotropis Cortex, P. I.; Akra.—The dried root bark of *Calotropis procera* and *C. gigantea* (Asclepiadace), common in India. Alterative, tonic, diaphoretic, and in large doses emetic. Recommended for leprosy, syphilis, diarrhoea, dysentery, and chronic rheumatism; also as a substitute for Ipecacuanha.

Pulvis Calotropis, P. I.—The bark of the fresh root, dried by exposure to the air and powdered. *Dose*. As an alterative tonic, 3 grains, increased to 10 grains or more, thrice daily; as an emetic, 30 to 60 grains.

MULLS.

Plaster Mulls.—A form of dressing consisting of a very thin sheet of gutta-percha, coated on one side with an adhesive substance containing the medicament and backed on the other side with mull or undressed muslin.

Salve Mulls.—A similar kind of dressing, in which the medicament consists of a firm ointment spread upon mull.

Both kinds of mulls are prepared in strips one metre 39 inches long and 20 centimetres (8 inches) wide, and are spread with all the medicaments commonly applied externally.

The various Plaster and Salve Mulls are referred to under the heads of their respective ingredients. For complete list, see INDEX.

MUSCARINA.

Muscarine.—An alkaloid obtained from fly agaric, *Agaricus muscarius* or *Amanita muscaria* (Fungi). It has also been obtained from brain

substance. Its action is similar to Pilocarpine, increasing the flow of saliva and sweat; like Gelsemium, locally, it dilates, and internally it contracts the pupil. It is antagonistic to Atropine in other respects. Useful in night sweats, in diabetes insipidus, in incipient pulmonary congestion, and in constipation due to deficient secretion. It is given only in the form of salts.

Muscarinæ Nitrás.—Very hygroscopic.
Dose— $\frac{1}{30}$ to $\frac{1}{15}$ grain, hypodermically or in pill.

Muscarinæ Sulphas.—Similar in properties and dose.

Antidote—Atropine, $\frac{1}{50}$ grain hypodermically, and repeated till relieved.—*B. M. J.* '74, ii. 617.

The symptoms of Muscarine poisoning have been observed to be similar to those of cholera, and the use of Atropine has been suggested as a remedy for the latter.—*B. M. J.* '89, i. 1335.

NAPHTHALINUM.

Naphthalene.—C₁₀H₈.—A hydrocarbon obtained in large quantities as a by-product in the manufacture of coal gas. In brilliant white scaly crystals, having a strong and unpleasant odour, insoluble in water, freely soluble in alcohol, ether, and oils. A fine, and less irritating powder, prepared by dissolving in alcohol and reprecipitating with water, is also met with under the name of **Naphthalinum Precipitatum**.

It acts as an antiseptic, and as such is used like Iodoform. A 10 to 20 per cent. solution in oil acts as a parasiticide in scabies. Internally it is useful in dysentery, incontinence of urine, and in catarrhal, typhoid, and phthisical diarrhoea. It has also been successfully used as an anthelmintic, in taenia and ascarides, in doses of 2 or 3 grains twice a day for children, adults in propor-

tion.—*L.* '86, ii 462. In infantile diarrhoea and fetid urine it may be given in cachets (see page 61), in doses of 2 grains for each year of age, twice or three times daily.—*L.* Oct. 5, '89.

Dose—2 to 10 grains or more; up to 15 grains (75 grains *per diem*) has been given.—*T. G.* '86, 243.

Naphthalene Tetrachloride. $C_{10}H_8Cl_4$.
Dose—3 to 12 grains, and *o*-Dichloronaphthalene ($C_{10}H_8Cl_2$), are also used.

NAPHTHALOL.—See page 258.

NAPHTHOL.

β -Naphthol; Naphthyl Alcohol. $C_{10}H_7.HO$.—An alcohol of Naphthalene. A derivative of coal-tar, in colourless or greyish silky leaflets with faint phenol-like odour, sparingly soluble in water, readily soluble in alcohol, ether, benzol, chloroform, and alkalies.

A powerful antiseptic and disinfectant. It is useful in scabies, eczema, and other skin diseases, having the advantage of being colourless and almost odourless. In psoriasis a paste of Naphthol 3, Lard 20, Green Soap 10, and Prepared Chalk 2, has been recommended. Internally $3\frac{1}{2}$ grains every 2 hours has been found to act well in typhoid fever, but may provoke gastric disturbance.—*Pr.* Dec. '88; *Ph. J.* Dec. 29, '88.

Dose—2 to 15 grains.

Naphthol may be dispensed in solution in camphorated spirit; the camphor forming a liquid combination with the Naphthol assists to keep the latter in solution. Alkalies should not be used, as, although good solvents, they form combinations with Naphthol which are weak antiseptics.—*Ph. J.* June 29, '89.

Unguentum Naphtholi, Kaposi's Ointment.—1 to 8.

Naphthol cum Camphora.— β -Naphthol 1, Camphor 2. A viscid liquid. Useful as a surgical dressing, and to protect surgical instruments. The Camphor acts as an anaesthetic when applied. This preparation is insoluble in water, but freely miscible with fixed oils, and will dissolve one-ninth of its weight of Iodine, also Cocaine.—*Ph. J.* July 27, '89; *K. Jan.* '90.

Naphthol-Mercury Compounds.—See page 145.

α -Naphthol. $C_{10}H_7\cdot HO$.—A powerful antiseptic, similar to β -Naphthol, and said to be much less poisonous. It also forms a liquid compound with Camphor.

α -Oxynaphthoic Acid, α -Naphthol-Carbonic Acid, Carbonaphtholic Acid. $C_{10}H_8(OH)COOH$. Formed from α -Naphthol, in a manner similar to the formation of Salicylic Acid from phenol. A white crystalline powder nearly odourless. Insoluble in water, soluble in alcohol and alkalies. Said to be five times stronger as an antiseptic than Salicylic Acid.—*Ph. J.* Dec. 1, '88.

Betol.—See page 258.

Hydronaphthol.—A proprietary preparation, put forward as an odourless, non-poisonous and non-corrosive antiseptic. Its composition is not definitely known, and it is said by some to consist of impure β -Naphthol. A greyish-white crystalline powder, soluble 1 in 20 of oil, 1 in 1,100 of cold water. The latter solution is recommended as an antiseptic lotion, 1 in 300 of warm water, or a solution of Hydronaphthol 1, Alcohol 2, Glycerine 8, has been recommended for washing out septic cavities and wounds.—*B. M. J.* May 11, '89. Has been used internally in diarrhoea, dysentery, cystitis, and flatulent dyspepsia. **Dose**—2 grains or more.

Microcidine.—A combination of Naphthol and Caustic Soda. Has quite recently come into use as an antiseptic, a 3 per cent. solution being used. Its toxicity is less than Naphthol or Corrosive Sublimate, although its action is somewhat feebler than either.

NIGELLA.

Mugrela.—The seeds of *Nigella sativa* (Ranunculaceæ), cultivated in India. Nigella seeds are extensively used as a spice, and in medicine as an aromatic to correct purgative medicines. They are said also to be antihelminthic, diuretic, and emmenagogue.

Dose—4 to 8 grains.

Tincture of Mugrela.—4½ ounces to 2 pints. *Dose*—30 to 60 minims.

NITROGLYCERINUM.

Nitroglycerine; **Trinitrin**; **Glo-no-in**; **Glyceryl Trinitrate**. $C_3H_5(ONO_2)_3$.—A dense, oily, and highly explosive liquid, prepared by dropping glycerine into a mixture of fuming nitric acid and sulphuric acid cooled below 40° F. After some hours the product is thrown into water, and the precipitated Nitroglycerine dried at 170° F. It is odourless, but has a sweet taste, and is very slightly soluble in water, but freely soluble in alcohol, ether, and chloroform. A mixture of Nitroglycerine with an infusorial earth forms the well-known explosive Dynamite.

Nitroglycerine is very useful in warding off attacks of angina pectoris, in which it is superior to Amyl Nitrite as its effects last longer. It is also given in sea-sickness, Bright's disease, neuralgia, paroxysmal headache, etc. It is said also to relieve the morphine craving, and to lessen the frequency of epileptic attacks. It is poisonous.

Antidotes—Ergot; Strychnine; Belladonna; application of cold to the head.

Dose— $\frac{1}{100}$ to $\frac{1}{50}$ grain, increased to grain.

The name *Trinitrin* has been adopted as official in the *B. P. Addendum '90*. It is better suited for prescribing.

Liquor Trinitrini, B. P. (Ad.). Liquor Nitroglycerini, Liquor Glouoini.—A 1 per cent. solution in rectified spirit. *Dose*— $\frac{1}{2}$ to 2 minims.

Tabellæ Nitroglycerini, B. P.— $\frac{1}{100}$ grain each with chocolate. A convenient and portable form. *Dose*—One or two.

Tabellæ Trinitrini Compositæ.—Trinitrin $\frac{1}{100}$ gr., Amyl Nitrite $\frac{1}{2}$ gr., Capsicum $\frac{1}{50}$ gr., Menthol $\frac{1}{10}$ gr. The Capsicum exerts a warming action, and the Menthol facilitates the absorption of the Nitroglycerine.

Injectio Nitroglycerini Hypodermica.— $\frac{1}{100}$ grain in 1 minim. *Dose*—1 to 4 minims. For collapse, etc.—*M.*

OLEA.—See INDEX.

OLEATA.

Oleates.—This class of preparations has of late come into extensive use in medical practice. They are of two kinds: an Oleate prepared by simple solution in Oleic Acid is termed **Oleatum**, as **Oleatum Hydrargyri**; when prepared by the double decomposition of metallic salt and Curd Soap (Oleate of Sodium) it is termed **Oleas**, as **Cupri Oleas**. The former class contain free Oleic Acid and are prepared of definite strength per cent., the latter are chemical compounds and contain no free Oleic Acid; they are liable to contamination with palmitic acid, this, however, may be removed by dissolving in Benzene.

The Oleates have a great penetrative power, and are in many cases superior to ointments.

Acidum Oleicum, B. P., Oleic Acid. $HC_{18}H_{32}O_2$.—A yellow oily liquid, insoluble in water but soluble in alcohol, ether, oils, etc. It is very readily absorbed by the skin and promotes the absorption of drugs with which it is combined.

It dissolves the alkaloids but not their salts, forming

Oleates of the Alkaloids—

Oleatum Aconitinae.—2 per cent. See page 20.

Oleatum Atropinæ.—1 in 40. As an anodyne for painful parts.

Oleatum Cocainæ.—1 in 3. As a local anaesthetic. This is usually diluted with Oleic Acid to about 5 per cent. for use.

Oleatum Morphinæ.—1 in 60 to 1 in 10. As a local sedative.

Oleatum Quininæ.—1 to 3. May be applied externally; also for internal administration, 8 grains to 1 ounce of Cod Liver Oil forming **Oleum Morrhuae cum Quinina**.

Oleatum Strychninæ.—2 per cent.

Oleatum Veratrinæ, U. S. P..—2 per cent. For neuralgia.

Oleanodyne.—A combination of Aconitine, Atropine, Morphine, and Veratrine, with Oleic Acid. Alone it forms a strong anodyne application; it may also be diluted with chloroform, spirit, or oils, but not with compound camphor or soap liniment.—*M.*

Lipanin.—See page 179.

Metallic Oleates—

Aluminii Oleas.—In powder. Mixed with an equal quantity of lard, it forms a useful styptic and antiseptic ointment, checking the muco-purulent discharge in eczema. Also used as a dressing for burns.

Arsenii Oleas.—20 grains of this Oleate to 1 ounce of lard is used as a caustic in the treatment of lupus, epithelioma, etc.

Bismuthi Oleas.—An unctuous substance, generally used undiluted, for acne, syco-sis, piles, and skin irritation generally.

Cupri Oleas.—A dark green unctuous mass. A good application for corns and warts, also used as a 25 per cent. ointment for ring-worm.

Ferri Oleas, Ferrous Oleate.—A waxy solid, pale green inside but dark red outside owing to oxidation. Used externally as a local astringent, internally as a tonic in conjunction with Cod Liver Oil.

Oleatum Hydrargyri, B. P., Oleate of Mercury. This, the most extensively used of the Oleates, is prepared of all strengths from 5 to 20 per cent., the *B. P.* standard being 10 per cent. It does not salivate unless applied in excessive quantity. It is extremely valuable in persistent inflammation, especially of the glands; and in syphilitic affections it is an excellent application, quickly restoring the skin to its normal condition.

It acts as a parasiticide in pediculi, and in ringworm it completely destroys the fungus. For the latter purpose, the addition of one-eighth part of Ether increases its penetrating power. The strength of Oleate to be used must be judged by the nature of the case. In applying Oleate of Mercury, as little friction as possible should be used, as this causes cutaneous irritation.

Oleatum Hydrargyri cum Morphina.—The above containing one grain pure Morphine in one drachm. It is used when the part affected is painful, or the application of the simple Oleate causes pain. This preparation does not keep well.

Hydrargyri Oleo-palmitas.—Formed by the double decomposition of Perchloride of Mercury and curd soap. A yellow unctuous body, about twice as strong as the 20 per cent. Oleatum. It is used diluted 1 to 3 with Vaseline, or as a plaster; 1 to 3 of Lead Plaster, as a substitute for Emplastrum Hydrargyri.

Plumbi Oleas.—A white unctuous preparation which has a sedative and astringent

effect on the skin. It is best applied as an ointment, mixed with an equal quantity of vaseline or lard. Arrests morbid discharges and allays irritation. Emplastrum Plumbi, *B. P.*, is a crude Oleate of Lead.

Unguentum Diachyli (Hebra).—Contains 50 per cent. of Lead Plaster, perfumed. Known also as *Unguentum Vasclini Plumbicum*.

Plumbi Stearas.—A white powder, formed by mixing solutions of subacetate of lead and curd soap, used alone or diluted with kaolin or starch, as a dusting powder for eczema, itching, etc.

Oleatum Zinci, B. P.—A 10 per cent. solution of Zinc Oxide in Oleic Acid.

Unguentum Zinci Oleati, B. P.—Equal parts of the above and Soft Paraffin. Having, unlike Zinc Ointment, the Oxide of Zinc in *solution*, it does not form a crust over the part, and is preferable in some cases. Useful in eczema.

Zinci Oleas.—Prepared by double decomposition. A white powder like French chalk, useful as a dusting powder in eczema. It may be diluted with kaolin or starch and perfumed with Thymol, 1 in 500. Valuable in hyperidrosis and osmidrosis.—*L.* '82, i. 974.

For various suggestions in connection with the pharmacy of Oleates, see *Ph. J.* xx. 433, 676.

Oleite; Polysolve; Solvine.—Special preparations, all of which consist of sulpho-ricinoleate of sodium, prepared by treating castor oil with sulphuric acid at a low temperature, washing with water and ether, and saponifying with soda. Oleite is a yellowish oily liquid, miscible with water, alcohol, chloroform, etc., readily absorbable by the skin, and having a remarkable solvent power as regards medicaments. For these reasons it has been recommended as a useful basis for skin applications. It readily dissolves such substances as Sulphur, Chrysarobin, Iodoform, etc., also alkaloids, the

activity of which it greatly increases. It may be mixed with gelatine and spread as a plaster.—*Ph. J.* July 5, '90. Applied alone it is soothing and emollient.—*Ph. J.* Feb. 1, '90. The same substance is used as a solvent for the dye of Turkey red, under the name of *Turkey Red Oil*.

OREXIN.

Orexine Hydrochlorate; Phenyl-dihydro-chinazolin Hydrochlorate.

$C_{14}H_{12}N_2 \cdot HCl \cdot 2H_2O$.—The hydrochlorate of a synthetically prepared base. A yellowish-white crystalline powder, soluble 1 in 13 of water and in alcohol, but insoluble in ether. Chemistry and mode of preparation, see *Ph. J.* July 19, '90. It has a nauseous pungent taste, which, however, is not due to caustic action.

It is said to have the property of stimulating the gastric secretion and thus increasing the appetite, hence its name (*öpegis*, appetite). Has been given in 36 clinical cases, in most of which the appetite was improved and the digestion accelerated.—*K. J.* July '90. Another series of experiments, however, has left much room for doubt as to its efficacy.—*M. R.* Aug. '90. Its effects require further investigation.

Dose—2 to 10 grains, in gelatine coated pills.

Pills with gentian and coated with chocolate have been recommended as avoiding the burning taste most effectually. They should be taken with a quantity of liquid to prevent any possible gastric irritation.—*H. J.* July '90.

PANCREATIC ENZYMES.

The Pancreatic secretion is a combination of four distinct ferments:—(1) *Pancreatic Diastase*, which converts starch into dextrin and sugar; (2) A curdling ferment, which curdles the casein

of milk in a manner similar to rennet ; (3) *Trypsin* which has powerful peptonising properties converting albumens into peptones in an alkaline or neutral solution ; (4) an *emulsifying ferment*, which emulsifies and partly saponifies fats. These four properties, therefore, are possessed by Pancreatic juice, and should be possessed by all good preparations of the Pancreas. The Pancreatic enzymes act only in neutral or alkaline solution, and are destroyed by weak acid, or a temperature of 160° F.

Pancreatic digestion being an intestinal operation, and Pancreatic enzymes being destroyed by the acid of the stomach, the following preparations are much more efficacious if used to peptonise food previous to administration than if given internally. Such food is useful in cases of weak stomach, maintaining nutrition, and allowing the stomach to regain its former powers.

Liquor Pancreaticus.—Prepared by treating the Pancreas of the pig with dilute spirit for about a week, then filtering. This preparation possesses the properties of Pancreatic juice, when not in an acid medium. *Dose*—1 to 2 drachms. May also be added to nutritive enemata, or mixed with beef-tea or gruel.

Extractum Pancreatis or Zymine.—A special preparation used for peptonising foods. When used for this purpose it must be mixed with Bicarbonate of Sodium, or used in the form of **Peptonising Powders**, which are put up in glass tubes, each containing 5 grains Extractum Pancreatis and 15 grains Bicarbonate of Sodium. Also in **Tablets**, 3 grains each. *Dose*—One or two after meals.

Pancreatine.—A dessicated extract of Pancreas, similar to the above. 5 grains with 20 grains Bicarbonate of Sodium should peptonise a pint of milk in 30 minutes (see page 204) ; this test forms a standard of strength. *Dose*—2 to 4 grains.

Peptonised Foods.—Useful when the digestive organs are weak from any cause. They do not keep in a warm climate, and should, when frequently required, be prepared twice a day. The following are recommended by Sir William Roberts (*Quain's Dict. Med.*, p. 1115):—

Peptonised Milk..—A pint of milk is diluted with a quarter of a pint of water, and heated to 140° F. (see note, page 101). Two teaspoonfuls of Liquor Pancreaticus with 10 grains Bicarbonate of Sodium, or one Peptonising Powder (see page 203) must then be added to the warm milk. This is put in a covered jug and kept warm for an hour or an hour and a half, or until the milk has become not more than very faintly bitter. It is then boiled for a few minutes and is ready for use.

Milk is completely peptonised when a small portion of it, transferred to a test-tube, does not coagulate on the addition of a slight excess of nitric acid. If more than a very faint bitterness is present, the process has gone too far.

Peptonised Gruel.—Gruel is to be prepared from any of the farinaceous articles in common use; it should be well boiled and made thick and strong. It is then put into a jug and allowed to become lukewarm, when a dessertspoonful of the Liquor Pancreaticus is to be added for every pint of gruel, and the whole kept warm as before. After two hours it is to be boiled and strained. The gruel becomes thin and watery and has no bitter taste. The starch of the meal is converted into sugar, and the albuminoid matters are peptonised.

Peptonised Milk-Gruel.—A gruel, prepared as above, is to be mixed while boiling hot with an equal quantity of cold milk. To each pint of this mixture two or three teaspoonfuls of Liquor Pancreaticus are to be added, with 10 grains Bicarbonate of Sodium, and the whole kept warm, boiled, and strained, like the last.

Peptonised Soups, Beef-Tea, etc., may be prepared on similar lines to the preceding.

Peptonised Enemata are prepared from gruel, beef-tea, etc., the Liquor Pancreaticus being added just before administration. The ferments act in the bowel.

Peptonised Beef Jelly.—A preparation sold in tins and consisting of an extract of beef, the fibrin of which has mostly been converted into peptone by the Pancreatic ferment. *Dose*—A teaspoonful alone, or added to soup, etc.

Pancreatic Emulsion.—Prepared by pancreatising Lard by a suitable process and then emulsifying. It is flavoured with Oil of Cloves, which also assists in preserving it. Useful in wasting diseases, especially where cod liver oil, etc., cannot be borne by the stomach. *Dose*—1 to 4 drachms in milk or water, once to thrice in 24 hours, 1 or 2 hours after meals.

Pancreatized Food.—Wheat flour impregnated with an extract of Pancreas. Mixing with milk or water causes artificial digestion of the food, a process which can be stopped at any point by boiling.

Trypsin.—A digestive enzyme from the Pancreas, recommended for spraying the throat in membranous or diphtheritic croup. Used as follows:—Trypsin 30 grains, Bicarbonate of Sodium 10 grains, Water 1 ounce, dissolve and apply with a brush, or as a spray, as frequently as possible.

PAPAIN.

Papain; Papayotin—A ferment prepared from the juice of the papaw, *Carica papaya* (Passifloraceæ), cultivated throughout India. A whitish amorphous powder, having great digestive powers, said to be capable of digesting 200 times its weight of fresh pressed blood fibrin. It acts more quickly than Pepsin, at a higher temperature, and does not require the addition of free acid.

It is used as a solvent of the false membrane in diphtheria, being used as a Spray, 2 drachms in 4 ounces, with 3 grains Hydronaphthol, and 15 minims Dilute Hydrochloric Acid.—*C. & D.* Mar. 30, '89.

A 5 per cent. solution, with 2½ per cent. Bicarbonate of Sodium, has been recommended for cleansing the middle ear in chronic suppuration, 15 minims being dropped into the meatus.—*Ed. M. J.* Jan. '90.

A Pigment containing Papain 12 grains, Borax 5 grains, water 2 drachms, painted on the hands twice a day, has been found to remove warts in chronic eczema and hypertrophied condition of the palms of the hands. A solution in Glycerine is useful in ulcers and fissures of the tongue, and Lozenges containing Papain $\frac{1}{3}$ grain with Cocaine $\frac{1}{10}$ grain are recommended for syphilitic ulcers of the tongue and throat.

7 grains of Papain digest a pint of milk in 1½ hour.—*B. M. J.* '85, ii. 125.

Dose—1 to 10 grains.

Elixir Papain.—For dyspepsia and seasickness. *Dose*—1 drachm.

Papaw Juice.—The milky juice of the unripe fruit of the Papaw is used as an anthelmintic and for dyspepsia. Externally it is said to be beneficial in ringworm and psoriasis. It has also a reputation among some classes of natives as an emmenagogue, but this has not been confirmed.—*P. L.*, p. 98. *Dose*—1 to 4 drachms.

PARACOTOIN.—See page 99.

PARAFFINUM DURUM,
B. P.

Hard Paraffin; Paraffin Wax; Solid Paraffin.—A mixture of several of the harder

members of the paraffin series of hydrocarbons; usually obtained by distillation from shale, separation from the liquid oils by refrigeration, and purification of the solid product. A colourless, odourless, waxy solid, sp. gr. 0·82 to 0·94, insoluble in water, slightly soluble in alcohol and ether. The *B. P.* gives too wide a range as regards melting-point (110° to 145° F.), consequently ointments made with this must vary in consistency.

Its chief use is to form ointment bases; it gives consistency to Vaseline, which as a rule is too soft for general use.

A paraffin prepared from ozokerit, or earth wax, has a higher melting point, 155° F., and is known as Ceresin.

PARAFFINUM MOLLE, B. P.

Soft Paraffin; Unguentum Paraffinum.—This is described in the *B. P.* as a semi-solid mixture containing some of the softer or more fluid members of the paraffin series of hydrocarbons; usually obtained by purifying the less volatile portions of petroleum. *Pétroléine* and *Petrolatum* are given as synonyms, and it is said to be 'known in commerce by various fanciful names.' A large number of preparations are sold as *Paraffinum Molle*, of which the following are a few:—

Vaseline, Saxoline, Chrisma, Fossiline, Cosmoline, etc.—Of these Vaseline answers most correctly the characters and tests of the *B. P.* Several of the others, having a higher melting point, are more suitable for use in India, but for most purposes Vaseline will be found best.

Vaselimum; Vaseline; Gelatum Petroleum; Petroleum Jelly.—A semi-solid, amber-coloured, unctuous substance, melting at 95° to 105° F.

When decolorised by passing through animal charcoal it is opal-white in colour, and is known as **Vaselinum Album** or White Vaseline, a form better suited for toilet purposes.

Vaseline is inodorous and unirritating; it is also unchangeable, never becoming rancid. Although alkalies do not saponify it, yet it may readily be removed from the skin by means of soap and water. As it is immiscible with water,* and not absorbed by the skin, its use as a basis for ointments is somewhat limited, though its latter property renders it a valuable *protective* and *lubricant* owing to the time it remains on the skin. On account of its low melting point, the following is in many cases preferable as a basis for ointments:—

Ceratum Petrolei.—Vaseline 2, Paraffin 1.—*M.* These proportions are hardly suitable for use in the tropics, a mixture of equal parts of Vaseline (100° F.) and Paraffin (130° F.) forming a cerate more suitable for general use in this climate. Should a stiff cerate be required, or in hot weather, the proportion of Hard Paraffin may be still further increased. Ceratum Petrolei does not liquefy on the surface of the body, so that if applied on lint, the latter may be removed with the cerate, leaving the skin free from adhering ointment.

Adepsine.—A petroleum product melting at about 120° F. It is prepared **Yellow** and **White**, the latter being like lard in appearance.

Petrolatum, U. S. P., Petroleum Ointment.—The form used in America. Two varieties are official, the softer melting at 104° F. and the harder at 125° F.

To prove whether or not a sample of Vaseline is admixed with animal or vegetable fats, a small quantity should be digested with an equal

* Vaseline and water may, it is said, be incorporated so as to form a homogenous mixture by the addition of 8 drops of castor oil for each drachm of liquid—*Ph. J.*, July 27, '89. We have been unable, however, to obtain a satisfactory unguent by this process.

quantity of caustic soda, in water, for half an hour : the aqueous layer should then be separated and supersaturated with dilute sulphuric acid, when if any oily matter separates the sample is mixed with these fats.

Paraffinum Liquidum, Liquid Vaseline, Oil Vaseline.—A limpid, oily liquid, neutral, odourless, and tasteless. It consists of a mixture of paraffins having a low melting point, and is used as an application in chronic eczema accompanied by desquamation, and also as a vehicle for the hypodermic administration of a number of medicaments. See **Hypodermic Injections**, page 308.

Oleum Deelinæ. An oil obtained from petroleum. Odourless and tasteless. It has been recommended in skin diseases, and as a liquid medium for applying other remedies.

Petroleum Soap. Contains 25 per cent. of Petroleum. It is an excellent medium for applying the insecticidal properties of petroleum to the skin.—*Ib. J. July 27, '89.*

PARALDEHYDUM, B.P. (Ad.)

Paraldehyde. $(\text{CH}_3\text{CHO})_n$.—A polymer of Aldehyde. It may be prepared from the latter by treatment with an acid. It is one of the chief ingredients in **Spiritus Aetheris Nitrosi, B. P.** (see page 22).

A colourless liquid, with a pungent unpleasant taste, soluble about 1 in 10 of water, any excess forming an emulsion by shaking. Sp. gr. 0.990.

It is a hypnotic resembling Chloral, but differs from it in its action on the circulatory system, strengthening the heart's action but diminishing its frequency. It is antagonistic to Strychnine, and is sedative rather than anodyne. It should not be given when there is gastric irritation, or in febrile conditions or lung affections.

It is most useful in mental diseases, usually causing sleep in from 5 to 15 minutes, lasting 5 to 7 hours, and appears to be devoid of danger in large doses.

It is not a cardiac depressant, has no limit of toleration, no marked craving appears to be induced by its use, the sleep is tranquil and quiet, and it is not liable to disorder the digestion. It increases the excretion of urea, but not of chlorides; and the urine in some cases, after a full dose, gives off the odour of Paraldehyde.—*B. M. J.* Mar. 9, '89; *Ph. J.* Mar. 30, '89.

Has been given in 5-minim doses with Simple Elixir for vomiting, especially that of pregnancy and ovarian irritability; also in the nausea of migraine, with most gratifying results.—*T. G.* Aug. '88.

Dose—40 to 60 minimis, or more. It has been given up to 4 drachms, and large doses are said to be preferable. May also be given as an enema. Its unpleasant odour is imparted to the breath, and is an objection to its use.—*K.* Jan. '90.

For a detailed comparison of this with other recent hypnotics, see *K.* Jan. '90.

Metaldehyde. $C_2H_{12}O_2$.—A polymer of Aldehyde, apparently identical in composition with Paraldehyde, but occurring in crystals, insoluble in water, slightly soluble in alcohol and ether. Has been used as a sedative and hypnotic. *Dose*—2 to 8 grains.

Sulphaldehyde, Thialdehyde. CH_2CH_2S .—Obtained by the action of sulphuretted hydrogen upon ethylic aldehyde. Chemically, it is Aldehyde containing sulphur in place of oxygen, and it occurs as an oily liquid with a disagreeable odour. When treated with an acid, solid polymers are formed constituted similarly to Paraldehyde. As met with in commerce, it exhibits a varying boiling point, and appears to be a mixture of Aldehyde and Trithialdehyde.

It has been administered to frogs and rabbits, and has been found to act as a hypnotic, inducing deep tranquil sleep, without any symptom of excitement. In consequence of its slight solubility the hypnotic effects are not manifested for some time after administration, but it is nearly three times as powerful as Paraldehyde. It is excreted in the urine.—*Ph. J.* Nov. 29, '90.

PASTÆ.

Liniuentum Exsiccans—Consists of—

Tragacanth Powder	5 parts.
Glycerine	2 , ,
Distilled Water	100 , ,

Small quantities may be prepared cold; large quantities require heat for their proper preparation.

A useful basis for the application of such medicaments as Tar, Ichthyol, Chrysarobin, Iodoform, etc., being free from the disadvantages of fatty liniments. Applied to the skin it dries in thin layers, producing a feeling of coolness, followed by one of tension.

Pasta Abri.—See page 2.

Pasta Amyli Iodidi.—See page 166.

Pasta Caustica.—Various formulæ are in use, containing Caustic Potash or Soda, or Chloride of Zinc as the principal ingredient.

Pasta Londinensis, London Paste.—Contains equal parts of Caustic Soda and Unslaked Lime. Used as a caustic, being mixed with water before use.

Pasta Viennensis, Vienna Paste.—Composed of Caustic Potash 5, Slaked Lime 6, and Spirit q.s. Also used as a caustic but more painful than the last.

Pasta Zinci Chloridi.—Chloride of Zinc and Wheaten Flour, equal parts, Glycerine q. s. Also with Extract of Opium, 20 grains to 1 ounce.

Coster's Paste.—See page 165.

PASTILLI.—See page 129.

PELLETIERINA.

Pelletierine. C₄H₁₁NO.—An alkaloid obtained from the root-bark of pomegranate, *Punica Granatum* (Lythraceæ), cultivated in India. It occurs in minute white crystals. The Tannate is most used in medicine.

Pelletierinæ Tannas.—A grey amorphous powder, insoluble in water. It is a powerful anthelmintic. A dose of 8 grains followed in 2 hours by a dose of Castor Oil has been found to expel the worm entire, causing neither colic nor headache. *Dose*—5 to 10 grains.

Pelletierinæ Sulphas.—In white crystals, which become brown and moist on keeping, freely soluble in water, given similarly to the Tannate. *Dose*—5 to 8 grains.

Pelletierinæ Hydrobromas.—A brownish liquid; has been used in cases of paralysis of the muscles of the eye. *Dose*—5 to 8 grains.

Granati Radicis Cortex, B. P., Pomegranate Root Bark: is official also in the *P. I.* as well as the rind of the fruit, **Granati Cortex.** The Decoction (1 in 10 of Root Bark) is used as an anthelmintic; a better form is

Extractum Granati Liquidum.—Made from the fresh root bark,* 2 in 3. *Dose*—1 ounce in the early morning, preceded by a dose of

* There are three varieties of Pomegranate, known as the red, white, and black-flowered varieties. Of these the white is supposed to be the most active.—*Ph. J. Nov 8, '90.*

castor oil, and repeated at intervals of one hour. Seldom fails to bring away the entire worm.

The rind of the fruit is a good astringent.

PEPSIN, B. P.

Pepsin.—A light yellowish-brown powder, prepared from the mucous lining of the stomach of the pig, sheep, or calf. Nearly free from odour, with a faintly saline taste. Some forms of Pepsin prepared in Europe contain a small proportion of sugar of milk or starch to make them keep; such Pepsins have a somewhat lower digestive power, and a different taste, but as a rule they keep better in a warm climate. The *B. P.* Pepsin should digest 50 times its weight of egg albumen in presence of hydrochloric acid in 30 minutes at 130° F. (see below).

The gastric juice contains two ferments—(1) *Pepsin*, which changes proteids, as fibrin, albumen, etc., into soluble peptones; (2) a *curdling ferment*, which curdles the casein of milk, and is contained in the preparation known as 'Essence of Rennet.' Medicinal Pepsin owes its activity to the former, exhibiting its proteolytic action only in an acid medium.

Pepsina Porci, the Pepsin prepared from the stomach of the pig, is usually preferred.

Good Pepsin should answer the following test:—

2 grains with an ounce of distilled water and 5 minims of dilute hydrochloric acid, form a mixture in which 100 grains of hard boiled white of egg will dissolve on being well stirred for about 30 minutes at 130° F.

Pepsin is a valuable digestive.

Dose—2 to 10 grains, with or immediately before or after meals.

The various proprietary 'digestive table salts' which are advertised consist essentially of chloride of sodium with a small percentage of Pepsin, and are used similarly to ordinary table-salt.

In the form of dusting powder or ointment, Pepsin has been recommended as a dressing for ulcers covered with slough or having a membranous base, in which it leaves a healthy granulating surface.

Pepsinum Saccharatum, U. S. P., Saccharated Pepsin.—The Pepsin of the hog, mixed with Sugar of Milk. 1 grain should digest 50 grains in 5 or 6 hours at 100° to 104° F. *Dose*—5 to 15 grains.

Liquor Pepsini, U. S. P.—4 per cent. in water, with Glycerine and Hydrochloric Acid. *Dose*—1 to 2 drachms.

Liquor Pepticus.—A solution of the gastric ferments, very useful as a digestive. *Dose*—One to two drachms with meals.

Glycerinum Pepsinæ Acidum.—An excellent method of administering Pepsin, has also been recommended as a solvent for the diphtheritic membrane. For this purpose it is first heated to 110° F., and then administered by means of a spray.

Lactopeptine.—A proprietary preparation, recommended for indigestion, and said to consist of Sugar of Milk 320, Pepsin 64, Pancreatin 48, Diastase 4, Lactic and Hydrochloric Acids of each 5 parts. *Dose*—10 to 15 grains, after meals. *For children*, 5 to 8 grains.

Bismuth and Pepsin.—See page 57.

Podophyllin and Pepsin.—See page 238.

Ingluvin.—An American preparation, prepared from the gizzard of the fowl, *Pullus gallinaceus*. It is put forward as a substitute for Pepsin, being prescribed in the same manner and combinations as the latter. It is recommended as a specific for the vomiting of pregnancy, and as a powerful and reliable remedy for the cure of indigestion, dyspepsia, etc. *Dose*—10 to 20 grains.

Peptonised Beef.—An extract of artificially digested beef. Useful as a nutrient enema, or in the form of **Suppositories**, containing about 50 grains each.

Peptonised Bismuth.—See page 58.

Peptonised Iron.—See page 119.

Beef Peptonoids.—Minc'd beef, digested with Pepsin and Hydrochloric Acid for several hours, neutralised with soda, and strained.

Vinum Pepsinæ.—A solution of the gastric ferments in sherry. *Dose*—1 to 4 drachms with meals.

Peptone.—A whitish powder, consisting of muscular tissue subjected to artificial digestion and reduced to a form immediately available for nourishment. Where the digestive powers are defective it will sustain the system by direct absorption. It is also used to add to jelly for germ cultivation, and as a test for bile in urine.

PHENACETINUM, B. P. (Ad.)

Phenacetin; Para-acet-phenetidin.— $C_6H_5OC_2H_5.NH.C_2H_5O$.—A crystalline substance produced by the action of glacial acetic acid on para-phenetidin, a body obtained from phenol. It is analogous to Antifebrin (page 37). In white crystals, odourless and tasteless, sparingly soluble in water, more so in glycerine, freely in alcohol.

A valuable antipyretic and analgesic. It is most valuable in all kinds of fever, being rapid in its action, harmless, and attended with no ill effects. A dose of 8 grains, administered to a fever patient, produces nearly always a marked fall in the temperature of the body, lasting some hours.

Phenacetin has also been found valuable as an analgesic in neuralgia, rheumatism, etc.

Dose—4 to 16 grains.

Phenacetin Lozenges.—4 grains and 8 grains each. Owing to the insolubility of Phenacetin this is the best method of administration. They are superior to compressed tablets as they readily disintegrate in the stomach.

Most useful in the fevers of India, both intermittent and continuous, also in that class of cases of a neuralgic or nervous nature doubtless also traceable to a malarious origin.—*L. M. G.* Aug. '89.

1½ to 5 grains every 3 to 6 hours, according to age and circumstances, proved most valuable in whooping cough.—*M. T.* April '90.

Its utility in sciatica cannot be overrated.—*B. M. J.* Apr. 7, '88. Has been used with marked success in neuralgia.—*B. M. J.* May 26, '88; *Pr.* May '88.

Acts in 20 minutes after its administration.—*Dujardin-Beaumetz.*

Phenacetin has also been found useful in hysterical vomiting, sunstroke, etc.

Owing to its solubility in Lactic Acid, its administration in that medium has been suggested.—*Ph. J.* Dec. 29, '88.

For the chemistry and preparation of the Phenacetins, see *Ph. J.* Nov. 24, '88.

Phenacetin was found on one occasion to produce toxic effects; inquiry proved that the sample was adulterated with Antifebrin.—*L.* Dec. 20, '90. The following simple tests will detect impurities:—

(1) 8 grains burned on platinum foil with free access of air should leave no residue of inorganic impurities.

(2) If 2 grains be heated with half a drachm of liquor potassæ, 2 or 3 drops of chloroform added, and the mixture again heated, the offensive smell of phenyl-carbylamin, isonitril, or

isocyano-benzene (resembling benzene and prussic acid), should not be produced, otherwise anti-febrin is present as an impurity.

Iodphenin.—See page 47.

Methyl-Phenacetin. $C_6H_5 \cdot OC_2H_5$.

NCH_3 . $C_9H_{11}O$.—A crystalline compound containing a methyl group in place of hydrogen and prepared from Phenacetin by a process of substitution. As stated under Exalgin (see note, page 117), the analgesic properties are more developed than in ordinary Phenacetin, the substance acting as a narcotic in very small doses. It is moderately soluble in water, and freely in ether.—*Ph. J.* Aug. 2, '90. Must be distinguished from *Methacetin*, see page 185.

Comparison of the Coal-Tar Antipyretics.—

From the published results in medical literature, and the experience of medical men here and in Europe, it may be gathered that, of the large number of such antipyretics introduced, only three have come into use to any great extent so far—Antipyrin, Antifebrin, and Phenacetin. Of the others, Resorcin, Kairin, and Thallin have long since fallen into disuse, Thallin, however, still being used as a remedy for gonorrhœa; Hydracetin (Pyrodin) and Phenyl-Urethane are said to require caution; Benzamilide and Methacetin are not yet sufficiently known; Antithermin has bad after-effects. Antipyrin (Phenazole), Antifebrin (Acetanilid), and Phenacetin have now been added to the British Pharmacopœia, and are all reliable remedies, Antifebrin having, however, almost entirely given place to the two others in practice.

As regards use in India, there is no doubt that Phenacetin is the favourite antipyretic, the quantity consumed during the influenza and fever epidemic in 1890 being very large. Antipyrin is still preferred for neuralgia and similar complaints, and when a prompt reduction of temperature is required in fevers with persisting high temperatures, Phenacetin having proved not quite so reliable in these respects. The harmless nature of Phenacetin is greatly in its favour as an

antipyretic for general use, especially for children, while it is peculiar in producing an agreeable rest and drowsiness in those taking it. 16 grains of Phenacetin affect the temperature of the body to the same extent as 8 grains of Antifebrin or 20 grains Antipyrin.

A well-known Bombay physician has informed the writer that he obtains excellent results from Antipyrin, both as an antipyretic and analgesic, when combined with Salicylate of Sodium in suitable proportions. He claims for such a combination that it is superior to Phenacetin when used with proper precautions, as by combination with small doses of a cardiac stimulant, varying the proportions of the antipyretic according to the age, etc., of the patient. He arranges the doses as follows :—

3 yrs.	Salicylate of Sodium	$2\frac{1}{2}$	grs.	Antipyrin	2	grs.
5 „	„	4	„	„	$2\frac{1}{2}$	„
10 „	„	5	„	„	3	„
15 „	„	$7\frac{1}{2}$	„	„	4	„
Adults	„	10	„	„	5	„

Such combinations are best administered in solution for the reason stated on page 40.

PHENOCOLL.

Phenol-Glycocol; Amido-acet-para-phenetidin.—A new antipyretic prepared by the combination of Glycocol (Amido-acetic-acid) and Phenetidin. In white acicular crystals, having a tendency to mat themselves together. Slightly soluble in ether, benzol, chloroform and cold water; freely in alcohol and warm water. The Hydrochlorate is soluble in 16 parts cold water; and may be given as an antipyretic and antineuralgic, in doses of 8 grains (this dose having the same effect as 16 grains Antipyrin).

PHLORIDZIN.

Phlorizin. C₉H₈O₁₀.—A glucoside existing ready formed in the root bark of the apple, pear, plum, and cherry-tree ($\phi\lambdaοιός$, bark, and $\rhoίζα$, root). It crystallises in long silky needles or tufts, is sparingly soluble in cold water, but freely soluble in boiling water and alcohol. It has the property of producing diabetes in animals to which it is administered, 1 gramme to 1 kilo. body-weight causing an excretion of sugar lasting for 24 to 30 hours and amounting to 6 to 12 grammes. It is used in physiological research.—*C. & D.* July 30, '89.

PHOSPHORUS, B. P.

Phosphorus.—A non-metallic element obtained from bones. It occurs as a semi-transparent, wax-like solid, emitting white vapours of phosphorous anhydride when exposed to the air; at 110° F. it melts, and a few degrees higher ignites, forming dense white fumes of phosphoric anhydride. It should always be handled with caution and kept under water. It is insoluble in water, but soluble in chloroform, bisulphide of carbon, oils and fats, as also in oils of turpentine and peppermint, forming chemical combinations with the last two, which are non-luminous and comparatively non-poisonous.

A nervine tonic and stimulant of great power. It is given in nervous prostration, skin diseases, neuralgia, etc. It is a violent poison, causing fatty structural changes of the kidneys and liver, and is contra-indicated in active congestion of the brain and in plethoric states of the system generally.

Dose— $\frac{1}{50}$ to $\frac{1}{20}$ grain.

Antidotes.—Emetics; Epsom Salts as a purgative; demulcent drinks, avoiding oils and fats; Sulphate of Copper, 3 grains every 5 minutes till vomiting is produced, then 1 grain

every 15 minutes; Morphine; French Oil of Turpentine*, $\frac{1}{2}$ drachm every half-hour.

Oleum Phosphoratum, B. P.—1 in 100. Luminous in the dark. Given internally chiefly with Cod Liver Oil, also diluted 1 to 2 of Almond Oil for use as eye-drops for cataract, 3 to 5 instillations daily. *B. P.* *Dose*—1 to 10 minims ($\frac{1}{2}$ to 5 minims is a more suitable range).

Oleum Morrhuae Phosphoratum.— $\frac{1}{100}$ grain in 1 drachm. *Dose*—1 to 4 drachms.

Pilula Phosphori, B. P.— $\frac{1}{5}$ grain of Phosphorus in 2 grains of mass. This is to be preserved under water, and mixed with 1 grain of Curd Soap for every 2 grains of mass when dispensed, so that strength is $\frac{1}{5}$ grain Phosphorus in 3 grains. *Dose*—2 to 4 grains. This preparation contains yellow wax and is not much used.

Various forms of Phosphorus Pill have been recommended from time to time, the great difficulty to be overcome being the preservation of the Phosphorus in an active form, owing to its tendency to oxidise and render the pills inert. The pills should be composed of ingredients which are readily soluble, and should be carefully preserved. If the pills glow when cut in the dark, the Phosphorus is in an active condition. See next page.

Red or Amorphous Phosphorus.—An allotropic variety of Phosphorus, differing from the ordinary variety in being less fusible, unoxidisable by the air, insoluble in bisulphide of carbon, and not readily inflammable. At high temperatures it is reconverted into ordinary Phosphorus. It is physiologically inert, unless it contains, as some samples do, a varying proportion of ordinary Phosphorus, when it is unsafe to administer.

Tinctura Phosphori Composita, B. P. C.—Contains $\frac{1}{5}$ grain Phosphorus in one drachm

* The oil distilled from the oleo-resin obtained from *Pinus nutritima* (Coniferæ).

of a mixture of Chloroform 1, and Alcohol 5.
Dose—3 to 12 minims on sugar.

Elixir Phosphori, B. P. C.—Compound Tincture 1, Glycerine 4. Contains $\frac{1}{5}$ grain Phosphorus in each drachm. Recommended as a stable and palatable liquid form. *Dose*—15 minims to 1 drachm.

Phosphorus Pills.—The following list contains the formulæ that are most in demand, being the proportions employed by a well-known manufacturer:—

1. *Pilula Phosphori Simpler.*—Phosphorus $\frac{1}{5}$ grain.

2. *Pilula Phosphori et Nuci Vomica.*—Phosph. $\frac{1}{10}$ gr., Extract Nux Vomica $\frac{1}{2}$ gr.

3. *Pilula Phosphori cum Quinina.*—Phosph. $\frac{1}{5}$ gr., Sulphate of Quinine 1 gr.

4. *Pilula Phosphori, Quinina, et Nuci Vomica.*—Phosph. $\frac{1}{10}$ gr., Sulph. Quin. 1 gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

5. *Pilula Phosphori Fortior.*—Phosph. $\frac{1}{6}$ gr.

6. *Pilula Phosphori Fortior cum Nuci Vomica.*—Phosph. $\frac{1}{3}$ gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

7. *Pilula Phosphori et Ferri.*—Phosph. $\frac{1}{6}$ gr., Ferrum Redactum 3 grs.

8. *Pilula Phosphori et Ferri cum Quinina.*—Phosph. $\frac{1}{6}$ gr., Fer. Redact. 3 grs., Sulph. Quin. $\frac{1}{2}$ gr.

9. *Pilula Phosphori Composita.*—Phosph. $\frac{1}{6}$ gr., Fer. Redact. 3 grs., Sulph. Quin. $\frac{1}{2}$ gr., Strychnine $\frac{1}{6}$ gr., in each.

10. *Pilula Phosphori cum Morphina.*—Phosph. $\frac{1}{6}$ gr., Hydrochlorate of Morphine $\frac{1}{12}$ gr., Valerianate of Zinc 1 gr.

11. *Pilula Phosphori et Cannabis.*—Phosph. $\frac{1}{6}$ gr., Extract Cannabis Indica $\frac{1}{2}$ gr.

12. *Pilula Phosphori et Aconiti.*—Phosph. $\frac{1}{6}$ gr., Extract Aconite (alcoholic) $\frac{1}{2}$ gr.

13. *Pilula Phosphori, Ferri, et Nucis Vomicae.*
—Phosph. $\frac{1}{3}$ gr., Fer. Redact. 3 grs., Ext. Nux Vom. $\frac{1}{2}$ gr.

14. *Pilula Phosphori, Aloes, et Nucis Vomicae.*
—Phosph. $\frac{1}{3}$ gr., Extract Aloes (aqueous) $\frac{1}{2}$ gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

15. *Pilula Phosphori et Zinci.*—Phosph. $\frac{1}{3}$ gr., Sulphate of Zinc 1 gr., Extract Valerian 2 grs.

16. *Pilula Phosphori, Ferri, et Aloes.*—
Phosph. $\frac{1}{3}$ gr., Ext. Aloes 1 gr., Dried Sulphate of Iron 1 $\frac{1}{2}$ gr., Strychnine $\frac{1}{3}$ gr.

17. *Pilula Phosphori Composita Fortior.*—
Phosph. $\frac{1}{3}$ gr., Sulph. Quin. 1 gr., Fer. Redact. 2 grs., Ext. Nux Vom. $\frac{1}{2}$ gr.

18. *Pilula Phosphori, Aloes, et Quininæ.*—
Phosph. $\frac{1}{3}$ gr., Ext. Aloes $\frac{1}{2}$ gr., Sulph. Quin. $\frac{1}{2}$ gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

19. *Pilula Phosphori et Digitalis.*—Phosph. $\frac{1}{3}$ gr., Digitalis 1 gr., Extract Hyoscyamus 2 grs.

20. *Pilula Phosphori et Cantharidis.*—Phosph. $\frac{1}{3}$ gr., Cantharides (in solution) $\frac{1}{10}$ gr., Nux Vomica (powder) 1 gr.

21. *Pilula Phosphori, Ferri, et Digitalis.*—
Phosph. $\frac{1}{3}$ gr., Digitalis 1 gr., Fer. Redact. 3 grs.

22. *Pilula Phosphori, Quinine, et Digitalis.*—
Phosph. $\frac{1}{3}$ gr., Sulph. Quin. $\frac{1}{2}$ gr., Digitalis $\frac{1}{2}$ gr., Opium $\frac{1}{2}$ gr., Ipecac. $\frac{1}{4}$ gr.

23. *Pilula Phosphori, Opii, et Digitalis.*—
Phosph. $\frac{1}{3}$ gr., Digitalis $\frac{1}{2}$ gr., Ipecac. $\frac{1}{4}$ gr., Opium $\frac{1}{2}$ gr.

24. *Pilula Phosphori cum Strychnina.*—
Phosph. $\frac{1}{3}$ gr., Strychnine $\frac{1}{30}$ gr.

25. *Pilula Phosphori et Belladonnæ.*—
Phosph. $\frac{1}{3}$ gr., Extract Belladonna $\frac{1}{4}$ gr.

26. *Pilula Phosphori et Cinchonidine.*—
Phosph. $\frac{1}{3}$ gr., Sulphate of Cinchonidine 1 $\frac{1}{2}$ gr..

Piperine $\frac{1}{2}$ gr., Podophyllin $\frac{1}{5}$ gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

27. *Pilula Phosphori Composita cum Nuce Vomica*.—Phosph. $\frac{1}{5}$ gr., Fer. Redact. 2 grs., Sulph. Quin. $\frac{1}{2}$ gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

28. *Pilula Phosphori Mitis cum Nuce Vomica*.—Phosph. $\frac{1}{10}$ gr., Ext. Nux Vom. $\frac{1}{2}$ gr.

29. *Pilula Phosphori, Ferri, et Strychninae*.—Phosph. $\frac{1}{10}$ gr., Fer. Redact. 3 grs., Strych. $\frac{1}{2}$ gr.

30. *Pilula Phosphori, Ferri, et Cantharidis*.—Phosph. $\frac{1}{5}$ gr., Fer. Redact. 2 grs., Cantharides (in solution) $\frac{1}{10}$ gr., Nux Vomica (powder) $\frac{1}{2}$ gr.

Zinci Phosphidum is sometimes given in place of Phosphorus (see page 301).

Acidum Phosphoricum.—The following forms of Phosphoric Acid are met with:—

Acidum Phosphoricum Concentratum, **B.P.**.— H_3PO_4 with 33·7 per cent. of water. A colourless, syrupy liquid, sp. gr. 1·5. Also prepared of sp. gr. 1·75, which may be brought to *B.P.* strength by adding to every three parts by weight of acid, one part of distilled water. *Dose*—2 to 5 minims.

Acidum Phosphoricum Dilutum, **B.P.**.—Contains 13·8 per cent. of H_3PO_4 . Sp. gr. 1·08. Tonic and refrigerant, similar to Sulphuric Acid, but more palatable. *Dose*—10 to 30 minims.

Acidum Phosphoricum Glaciale, Metaphosphoric Acid. HPO_3 .—In colourless crystalline masses or sticks. These have a tendency to absorb water and become liquid, the solution becoming converted into ordinary or Orthophosphoric Acid.

Pyrophosphoric Acid, $H_2P_2O_7$, is a product of the dehydration of Phosphoric Acid, and is not used medicinally, although its sodio-citro-ferric salt, Pyrophosphate of Iron, is official in the *U.S.P.* (See page 124.)

Acidum Hypophosphorosum, B. P. C.,
Hypophosphorous Acid.—A colourless liquid, containing 30 per cent. of Hypophosphorous Acid, H_3PO_2 . Prepared by decomposing the Barium Salt with Sulphuric Acid, and evaporating the filtrate. It is used in the preparation of solutions and syrups of the Hypophosphites, and has been recommended as a solvent of Morphine and Strychnine for hypodermic injection.

The following **Hypophosphites** are used medicinally as assimilable forms of Phosphorus, as they contain their Phosphorus in weak combination, decomposing when heated into phosphoretted hydrogen and pyrophosphate. In contact with a naked flame they burn like Phosphorus, emitting white fumes. They are all crystallisable, and soluble in water, but their solutions gradually oxidise on exposure. They are useful nervine tonics, given in the incipient stages of phthisis, and are useful in acne.

Ammonii Hypophosphis, $(NH_4)_2PH_2O_4$.—In large crystalline plates, nauseous in taste.
Dose—1 to 6 grains.

Calcii Hypophosphis, B. P. $CaP_2H_4O_7$.—White crystals. *Dose*—1 to 10 grains.

Syrupus Calcii Hypophosphitis.—1 grain in each drachm. *Dose*—1 to 4 drachms.

Syrupus Calcii, Manganesii, et Potassii Hypophosphitum, B. P. C.—Contains 2 grains Calcium and 1 grain each Potassium and Manganese Hypophosphites in each drachm. *Dose*— $\frac{1}{2}$ to 1 drachm.

Ferri Hypophosphis, Ferrous Hypophosphate, $FeP_2H_4O_7 \cdot 6H_2O$.—When pure this is in green crystals, but it very rapidly oxidises, the salt ~~as~~ met with in commerce being usually amorphous and insoluble in water. *Dose*—1 to 5 grains.

Liquor Ferri Hypophosphitis Fortis, B. P. C.—About 5 grains in each drachm. *Dose*—10 to 30 minims.

Syrupus Ferri Hypophosphitis, B.P.C. —1 of the Liquor in 5. *Dose*— $\frac{1}{2}$ to 2 drachms.

Manganesii Hypophosphis.—See p. 183.

Potassii Hypophosphis. KPH₂O₃.—A deliquescent, granular white powder. *Dose*—1 to 6 grains.

Sodii Hypophosphis. NaPH₂O₃.—Like the last, but less deliquescent. *Dose*—1 to 10 grs.

Syrupus Sodii Hypophosphitis.—1 grain in each drachm. *Dose*—1 to 4 drachms.

Liquor Hypophosphitum Compositus, B. P. C.—Each drachm contains:—

Hypophosphate of Sodium	2 grains.
.. Calcium	2 grains.
.. Magnesium	1 grain.
.. Iron	1½ grain.

Dose— $\frac{1}{2}$ to 2 drachms. A useful tonic for children.

Syrupus Hypophosphitum Compositus, B.P.C.—Each fluid ounce contains:—

Hypophosphate of Calcium	4 grains.
.. Manganese	2 grains.
.. Potassium	2 grains.
.. Quinine	1 grain.
.. Strychnine	1/16 grain.
.. Iron	6 grains.

Dose— $\frac{1}{2}$ to 2 drachms.

The following formulæ have been published as the result of analysis of the 'Syr. Hypophos. Comp.' advertised, the undermentioned quantities being the constituents of one fluid ounce:—

	No. 1.	No. 2.
Hypophosphate of Sodium	3 gr.	....
.. Potassium	1/2 gr.	1/2 gr.
.. Manganese 1 gr.	1 gr.	1 gr.
.. Iron 1 gr.	1/4 gr.	1/4 gr.
.. Calcium	1 gr.	1 gr.
.. Quinine 1/16 gr.	1/16 gr.	1/16 gr.
.. Strychnine 1/16 gr.	1/16 gr.	1/16 gr.

Either of the above makes a syrup resembling the proprietary remedy in all essential particulars.
Dose— $\frac{1}{2}$ to 2 drachms.

Glyceritum Hypophosphitum Compositum.—Containing the ingredients of the Syrup, and made with Glycerine (see page 133).

PHYSOSTIGMA, B. P.

Physostigmatis Semen; Calabar Bean.—The dried seed of *Physostigma venenosum* (Leguminosæ), Western Africa.

It is a powerful poison and owes its properties chiefly to *Physostigmine* (see page 227). It contracts the pupil, and is antagonistic to Strychnine, but should not be depended on as an antidote. Useful in traumatic tetanus. It produces strychnia-like symptoms at first, probably due to the other alkaloid *Eseridine* which it contains.

It may be administered by mouth, anus, or subcutaneously, and to be of any use must be given in quantity sufficient to produce paralysis, to such an extent that little more would arrest breathing. It must be given with great care and watchfulness, in small and increasing quantities every hour or oftener, so that it may be at once stopped should serious paralytic symptoms arise.—*Ring*.

Calabar Bean in large doses is also useful in chorea, from 3 to 20 grains, according to age, being given thrice daily.—*Fraser*.

Also used in paralysis and nervous affections.

Dose—1 to 4 grains, in powder.

Antidotes.—Stimulants; artificial respiration; Apomorphine; Atropine; Chloral; Strychnine.

Extractum Physostigmatis, B. P.—An alcoholic extract of the seed. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Injectio Physostigmatis Hypodermica.—10 grains Extract in $\frac{1}{2}$ ounce, emulsified with gum and spirit. *Dose*—3 to 12 minims.

Tinctura Physostigmatis.—1 of Powdered Bean in 5. *Dose*—10 minims, gradually increasing.

Physostigminina, B. P., Physostigmine, Eserine. $C_11H_{21}N_3O_2$.—An alkaloid obtained from the alcoholic extract, by treatment with an alkali and dissolving the alkaloid in ether. Colourless or pinkish crystals, slightly soluble in water, freely in alcohol and dilute acids.

Solutions of Physostigmine and its salts rapidly become red on keeping but do not lose their efficacy thereby. All preparations of Physostigmine should be kept away from light.

Physostigmine and its preparations, when applied locally to the eye, cause great and lasting contraction of the pupil, and are antagonistic to Atropine. They are useful in corneal ulcers in serofula, a solution of 2 grains to the ounce being dropped into the eye. In presbyopia, $\frac{1}{60}$ to $\frac{1}{10}$ grain in solution may be dropped into the eye at one time. In chorea and tetanus they are employed hypodermically in doses of $\frac{1}{15}$ to $\frac{1}{5}$ grain, and are very valuable.

Dose— $\frac{1}{60}$ to $\frac{1}{10}$ grain.

Lamellæ Physostigminæ, B. P.— $\frac{1}{100}$ grain in each.

Hypodermic Tablets contain $\frac{1}{60}$ grain in each.

Physostigminæ Hydrobromas.—Freely soluble in water. *Dose*— $\frac{1}{60}$ to $\frac{1}{10}$ grain, may be increased to $\frac{1}{5}$ grain.

Physostigminæ Salicylas, U. S. P.—Eseridæ Salicylas, Physostigminum Salicylicum, P. G.—Colourless crystals, soluble 1 in 130 of water, 1 in 12 of alcohol. Both crystals and solution become red by keeping. *Dose*—Same as the last.

Injectio Physostigminæ Salicylatis Hypodermica.—1 in 160. *Dose*—1 to 6 minims.

Physostigminæ Sulphas, Eserinæ Sulphas.—An amorphous powder, very soluble and deliquescent. *Dose*—Same as the others.

Guttæ Physostigminæ.—2 grains to 1 ounce.

Guttæ Physostigminæ Fortiores.—4 grains to 1 ounce.

Guttæ Physostigminæ cum Cocaina.—1 grain Sulphate of Physostigmine and 5 grains Hydrychlorate of Cocaine to 1 ounce.

Injectio Physostigminæ Sulphatis Hypodermica.—4 grains to 1 ounce. *Dose*—1 to 4 minims.

Eseridine. $C_{15}H_{23}N_3O_4$.—An alkaloid said to exist already formed in Calabar Bean, and also to be producible from Physostigmine. It is sparingly soluble in water or ether, but soluble in dilute acids. It resembles Physostigmine in its laxative action, but does not disturb the cerebral nervous system, and is an irritant of the spinal cord though not cumulative like strychnine. It is permanent in solution, six times less poisonous than Physostigmine, and acts on the bowels with a minimum of disturbance of the nervous system. *Dose*—Not fixed : six times that of Physostigmine is required to produce toxic results.—*Ph. J. Nov. 3, '88.*

PHYTOLACCÆ RADIX, U. S. P.

Poke Root.—The root of *Phytolacca decandra* (Phytolaccaceæ), an American plant.

Emetic, purgative, and slightly narcotic. The fluid Extract has been used as an application and internally for painful mammae, also for syphilitic and rheumatic affections, catarrhal affections of mucous membranes, headache, dysmenorrhœa, congestion of the liver, etc.

Extractum Phytolaccae Fluidum.—Miscible with water. *Dose*—2 to 10 minims as an alterative; 20 to 30 minims as an emetic.

Tinctura Phytolaccae.—1 in 10. *Dose*—3 to 10 minims. 4 to 6 minims relieves orchitis.—*L.* '85, ii. 1161.

Phytolaccin.—The powdered extractive. A powerful hepatic stimulant, also slightly stimulates the intestinal glands.—*Rutherford.* *Dose*— $\frac{1}{2}$ to $\frac{1}{2}$ grain as an alterative; 2 to 4 grains as a purgative.

PICHI.

The leaves and twigs of *Fabiana imbricata* (Solanaceæ), of North America and Chili. It has been said to contain an alkaloid, *Fabianine*, but this statement has been contradicted. The active principles appear to be a fluorescent glucoside, a volatile oil, and a crystalline neutral resin.

Pichi is useful in some urinary diseases. Though not adapted for cases of organic kidney disease, it is valuable in allaying the irritation of gravel or calculi and favouring their expulsion. Also used in cases of lumbago, sciatica, etc. Its use is contra-indicated where destruction of tissue and degenerative changes have taken place; consequently it should not be given in albuminuria, as it is liable to produce harmful effects.

Extractum Pichi Liquidum.—Not miscible with water, but may be rendered miscible by the addition of alkali. *Dose*—10 to 40 minims.

PICROTOXINUM, B. P. (Ad.)

Picrotoxin. C₉H₁₀O₂.—A neutral crystalline principle obtained from the seeds of *Anamirta paniculata* (*Anamirta Coccinea*), Meni-

speciosa, commonly known as *Cocculus Indicus*. The plant is a large climbing shrub found in the Concan, Malabar, Travancore, Bengal, and Assam.

Picrotoxin exists in the seeds to the extent of 0·4 to 1·0 per cent., is obtained by exhaustion with alcohol, evaporation, and purification, and occurs in colourless and inodorous prismatic crystals, possessing a bitter taste. Sparingly soluble in cold water, more soluble in boiling water. Soluble in 13 parts of spirit, and 10 parts of solution of potash ; the latter solution on boiling reduces Fehling's solution. With sulphuric acid and bichromate of potassium it gives a reaction somewhat similar to that of strychnine. Picrotoxin may be split up into *Picrotoxinin*, *Picrotin*, and *Anemirtin*.

A valuable remedy in night-sweats, useful also in some forms of epilepsy, and for dysmenorrhœa, leucorrhœa, etc. Externally it is a good parasiticide, and is useful for ringworm of the scalp, pediculi, and other parasitic diseases. It is a powerful poison.

Dose— $\frac{1}{60}$ to $\frac{1}{5}$ grain, in pill or soluton.

Antidote.—Chloral Hydrate and Picrotoxin are mutually antagonistic, $\frac{1}{20}$ grain of the latter being neutralised by 30 grains of Chloral.

Picrotoxin is an antidote to morphine (*Ph. J.* Mar. 2, '89), and chloroform asphyxia.

Injectio Picrotoxini Hypodermica.—1 grain in 240 minims of water. *Dose*—2 to 8 minims. Should be freshly prepared.

Liquor Picrotoxini Aceticus.—2 grains to 1 ounce with Acetic Acid. This keeps better than the last, and is suitable for internal administration. *Dose*—2 to 8 minims, in water.

Pigmentum Picrotoxini.—1 grain in 1 drachm with Acetic Acid, Castor Oil, and Eucalyptus. For external use.—M.

Unguentum Picrotoxini.—10 grains to 1 ounce. The last two may be diluted if too

strong, and should not be applied to abraded surfaces.

Coccus Indicus, P. I.—The dried berries of the plant are used externally as an insecticide in the form of

Unguentum Cocculi, P. I.—80 grains to 1 ounce. Should not be applied where the skin is abraded.

Coccus Indicus is largely exported to Europe but is little used in India. Its chief application is as a poison for wild cattle for purposes of capture.—*Pg. Ind.*

PILOCARPINE.—See page 170.

PILLS.—See page 311.

PINUS.

The following preparations from the various species of *Pinus* (Coniferae) are in use medicinally:—

Pinus sylvestris, Scotch Pine, Scotch Fir.—From the wood of this, as well as other species, Oil of Turpentine is produced by distillation.

Oleum Pini Sylvestris, B. P.—Fir-wood Oil.—The oil distilled from the fresh leaves. It is a colourless oil with an aromatic lavender-like flavour. Sp. gr. 0·870. It is used as a liniment for rubbing, or as an inhalation in chronic laryngitis in the form of

Vapor Olei Pini Sylvestris, B. P.—40 minims to 1 ounce with Light Carbonate of Magnesium. One drachm in a pint of water at 140° F. (see note, page 101) to be placed in an inhaler, so that air may be passed through the mixture and inhaled.

Extractum Pini Sylvestris, Fir Wool Extract.—A dark brown extract prepared from *Pinus sylvestris*. It is readily soluble in water, 2 or 3 ounces in 30 gallons of warm water forming a good bath for rheumatism.

Fir Wool Wadding, Fir Wool.—Said to be composed of the fibres and hairs of *Pinus sylvestris*, and by others to be a cotton wool impregnated with the oil. It is used in conjunction with the oil for rheumatism, and is also made into **Pine Wool Felt**, from which are manufactured chest-protectors, belts, etc.

Oleum Pini Pumilionis.—The volatile oil distilled from the leaf of the snow-grown Mountain Pine, *Pinus pumilio*, and known commercially as *Pumiline*, *Pinol*, etc.

It is a very pure essential oil, being said to be more agreeable and less irritating than other fir oils, and is recommended for gout, rheumatism, bronchitis, sore throat, and chest affections. It may be given as an inhalation by means of a respirator or steam inhaler; a gargle or lotion of 10 to 15 drops in $\frac{1}{2}$ pint water; an embrocation either by rubbing with the hand or applying on flannel; or internally in doses of 3 or 4 drops on a lump of sugar, or in **Jujubes** containing $\frac{1}{2}$ minim each. It is also used for fumigating sick rooms.

Extractum Pini Pumilionis, Pumilio Pine Extract, Pumiline Extract.—A thick semi-liquid extract, prepared from the young shoots of *Pinus pumilio*. It is very soluble in water, and is used for baths, poultices and plasters. In this form it is useful for skin diseases and sleeplessness, and also for rheumatism and like complaints.

Pumilio Pine Soap is also prepared.

Wood Wool Wadding and Sanitary Wood Wool.—These consist of finely-divided pine wood rendered antiseptic by means of Cor-

native Sublimate. They are used as wound dressings and are made into diapers, pads, etc.

A nostrum known as 'Pinus Canadensis' is sold as an astringent for making injections, gargles, lotions, etc. Its composition is not stated, but it appears from a sample examined by the writer to consist mainly of a solution of sulphate of zinc, and has little in common with the foregoing preparations of Pinus. It is sold in two forms, *dark* and *white*.

PIPERINA, U. S. P.

Piperine. $C_{17}H_{19}NO$.—A proximate principle of feebly alkaloidal powder, prepared from the fruit of *Piper nigrum* (Pepper), and other plants of the Nat. Ord. Piperaceæ. In colourless or pale yellow crystals, almost insoluble in water, soluble in alcohol. It is not the active principle of Pepper. Heated with an alkali it forms **Piperidine** ($C_8H_{11}N$), a volatile alkaloid, which is the source of the pungency of Pepper, and is now believed to exist ready-formed in the berries.—*Ph. J.* Dec. 1, '88.

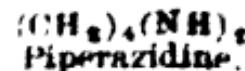
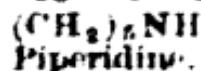
Piperine is an antipyretic and has been used inague.—*B. M. J.* '86, ii. 449, 613.

Dose—1 to 10 grains.

Piperonal, an aldehyde corresponding to piperonilic acid, is obtained by the oxidation of Piperine. It is in small white crystals, having the odour of vanilla, insoluble in water, soluble in alcohol and ether. Has been used as an antipyretic and antiseptic. Its antipyretic action is not strong, and it causes nausea, eructations, and dryness of the throat. *Dose*—15 grains every 2 hours or 3 or 4 times a day.

Piperazidine, Diethylene-diimine, Hexahydro-pyrazine. $C_4H_{10}N_2$.—A synthetic base,

* Piperazidine may be looked upon as Piperidine with the CH_2 group replaced by NH , thus—



acid to be identical with *Spermine*, a substance which has recently attracted attention in consequence of the statements made by Brown-Séquard. It occurs as a white crystalline powder, and its Hydrochloride as small crystalline needles, soluble in water, and non-poisonous. *Piperazidine* has a remarkable power of dissolving urates, being said to be capable of dissolving 12 times as much uric acid as an equal weight of carbonate of lithium. *Dose*—Hypodermically 5 grains *per diem*; up to 8 grains several times a day by the mouth.

PISCIDIA.

Jamaica Dogwood.—The root-bark of *Piscidia erythrina* (Leguminosæ), a tree growing in the West India Islands. It is used in America for intoxicating and catching fish. The active principle is believed to be a resinoid *Piscidin*.

A good narcotic and general sedative, recommended in place of opium as causing neither headache nor constipation, although somewhat inferior to opium as an analgesic. It dilates the pupil. Useful in bronchitis, phthisis, and facial neuralgia : locally it relieves toothache.

Extractum Piscidiae Liquidum.—Not miscible with water. *Dose*— $\frac{1}{2}$ to 2 drachms.

PIX.

The following are the principal varieties of this substance in use medicinally, with their preparations:—

1. **Pix Burgundica, B. P.**, Burgundy Pitch.—A resinous exudation from the stem of *Pinus Picra* (*Abies excelsa*), Coniferae, melted and strained, used to prepare **Emplastrum Picis, B. P.**

2. **Pix Carbonis Liquida Preparata, B. P. C.**, Prepared Coal Tar.—Commercial Coal Tar, prepared by heating it for 1 hour at 120° F.

Liquor Picis Carbonis.—1 of the above to 5 of Tincture of Quillaia.

Liquor Carbonis Detergens, an alcoholic solution of Coal Tar, is a dark-coloured liquid. It is used as a lotion, 1 in 20 of water, or as an ointment, 1 to 8, for prurigo and other skin diseases.

3. **Pix Canadensis**, U. S. P.—Canada Pitch, Hemlock Pitch.—The resinous exudation of *Abies canadensis* (see page 1). Used to prepare a Plaster.

4. **Pix Liquida**, B. P., Wood Tar, Goudron.—Prepared by the destructive distillation of the wood of *Pinus sylvestris* and other species. A powerful antiseptic, due to the Creosote it contains. Internally Tar is given for bronchitis and chronic catarrhal affections, externally it is used for chronic skin diseases. As a surgical dressing it is used in the form of Oakum (old tarry rope carded), or Marine Lint (tow impregnated with fresh tar).

Dose—2 to 10 grains.

Unguentum Picis Liquidae, B. P., Tar Ointment.—Tar 5, Yellow Wax 2. Used in psoriasis and ringworm.

Aqua Picis, Tar Water, *Eau de Goudron*.—1 in 200. *Dose*—5 to 10 ounces.

Capsules de Goudron, Tar Capsules.—Contain about 2½ grains each. *Dose*—1 or 2.

Liquor Picis Ligni.—Similar to solution of Coal Tar; prepared with Tincture of Quillaia.

Pilula Picis Liquidae.—2 grains each. *Dose*—1 or 2.

Syrupus Picis Liquidae.—6 per cent. *Dose*—1 to 4 drachms.

Oleum Picis Rectificatum, Light Oil or Spirit of Tar.—A colourless or pale yellow light oil distilled from Wood Tar. Sp. gr. 0·863 to 0·867. Used for making Coster's Paste. (See page 165.)

5. Empyreumatic Oils.—The following pyroligneous or empyreumatic oils are used in the treatment of skin diseases:—

Oleum Cadinum, B. P. (Ad.). Juniper Tar Oil, *Huile de Cade*.—An empyreumatic oily liquid obtained by destructive distillation of the woody portions of *Juniperus Oxycedrus* (Coniferae), and other species. A dark brown liquid, used in psoriasis and eczema. It is soluble in oils, fats, etc., also in ether and chloroform, but only slightly in spirit.

Unguentum Olei Cadini.—Equal parts of Yellow Wax and *Huile de Cade*.

Oleum Rusci.—A tar, having the odour of Russia leather, and said to be obtained from Butcher's Broom. It is used in some skin diseases. Must be distinguished from the German *Oleum Rusci*, which is prepared by digesting Butcher's Broom in Olive Oil. It is a Birch Tar, identical with

Oleum Betulæ Albæ, Birch Tar.—Prepared by the destructive distillation of the wood of *Betula Alba*. It is used to give the odour to Russia leather.

Liquor Rusci Detergens.—A solution of Birch Tar in alcohol, which is miscible with water and free from the objectionable qualities of the crude oil. It is used as a lotion for eczema and other chronic skin affections, being diluted with 16 times its bulk of water.—*C. & D.* July 27, '89.

Oleum Fagi Pyroligneum, Beech Tar. is used as a source of Creasote (see pages 100, 101).

PODOPHYLLI RESINA, B. P.

Podophyllin.—The resin obtained from the rhizome of American mandrake, May apple, or vegetable mercury. *Podophyllum peltatum*

Berberidaceæ), also from the species found on the Himalayas, *P. emodi*, by percolation with spirit and precipitation with water. A yellowish brown powder, forming a cloudy solution with spirit, and a clear solution with aqueous ammonia. The active principle is a crystalline substance **Podophyllotoxin**, the amorphous form of which is given in doses of $\frac{1}{10}$ to $\frac{1}{4}$ grain; this again may be split up into **Picropodophyllic Acid**, **Picropodophyllin**, and **Podophyllic Acid**.—*Podocissotzki*.

The resin obtained from the Indian plant, *P. emodi*, occurs in much greater quantity than that from the American species. American Podophyllum yields on an average 5 per cent. of resin, while the Indian species has been found to yield 10 to 12 per cent. *Pg. Ind.* i. 69.; *Ph. J.* Jan. 26, '89. The resin obtained from *P. emodi*, moreover, contains 56 per cent. of Podophyllotoxin, as against 40 to 45 per cent. yielded by American Podophyllin. The Indian resin promises therefore to be much more valuable, although it is not as yet a commercial product.—*Ph. J.* May 31, '90; *M. R.* Sept. '90.

Podophyllin is an active cholagogue and purgative, and is useful in sick headache and biliousness. It is also given combined with Pepsin, Belladonna, etc. (see below).

Dose— $\frac{1}{4}$ to 1 grain.

Tinctura Podophylli, B. P.—1 grain to 1 drachm. *Dose*—15 to 60 minims.

Tinctura Podophylli Ammoniata.—Same strength and dose as the last, but made with Aromatic Spirit of Ammonia. It is miscible with water, while the sal volatile acts as a corrective.—*M.*

Tinctura Podophylli (Dobell's).—1 grain to 1 ounce, with 1 drachm Essence of Ginger. *Dose*—One drachm in water at bedtime.

Glycerinum Podophylli.—4 grains to 1 ounce. *Dose*—30 to 60 minims.

Pilulae Podophylli.— $\frac{1}{2}$ grain each, alone or combined with aperients.

Pilulae Podophylli cum Belladonna et Strychnina, Tonic Liver Granules.—Contain in each pill

Podophyllin .. .	.. .	.. } grain
Extract of Belladonna .. .	.. .	.. } grain
Strychnine .. .	.. .	.. } $\frac{1}{2}$ grain

Gelatine coated. *Dose*—One morning and evening. These form a valuable medicine where hepatic disorder is due to defective nerve influence.

Pilulae Podophylli et Pepsinæ, Digestive Granules.—Contain in each pill $\frac{1}{2}$ grain Podophyllin in combination with Pepsin.

Liquor Podophylli,

Liquor Podophylli cum Belladonna et Strychnina, and

Liquor Podophylli et Pepsinæ. are liquid representatives of the above pills. *Dose of each*—One drachm.

PONGAMIAE OLEUM.

Pongamia Oil; Honge Oil.—The oil expressed from the seeds of Karanj, *Pongamia glabra* (Leguminosæ), a tree common in India. It is a yellow oil, sp. gr. 0.935, solidifying at 46.4° F. It occurs to the extent of 27 per cent. of the seeds.

It is valued as a remedy for skin diseases, chiefly scabies, herpes, and complaints of a like nature, and is best used shaken up with an equal quantity of lemon juice, when it forms a rich yellow liniment. The oil is also used as an embrocation in rheumatism.—P. I. p. 79.

Other parts of the plant are used by natives for a great variety of diseases.—Py. Ind. i. 468.

POTASSIUM.

In addition to the official preparations of Potassium, the following are most commonly used medicinally :—

Liquor Potassæ (Brandish). Brandish's Alkaline Solution.—Prepared from Pearl Ash, Wood Ash, Quicklime, and Water. *Dose*— $\frac{1}{2}$ to 2 drachms for scrofulous tumours.

Potassii Benzoas.—A crystalline powder freely soluble in water, given in cystitis with lithic acid diathesis. *Dose*—15 to 20 grains.

Potassii Cobalto-nitris. Cobalto-nitrite of Potassium.—A yellow or olive-coloured crystalline powder, slightly soluble in water. It relieves arterial tension, and lessens the dyspnoea of uræmia and asthma, without producing so much discomfort as other nitrites. *Dose*— $\frac{1}{2}$ grain every 2 or 3 hours. *Ph. J.* Nov. 3, '88.

Potassii Cyanidum, B. P., KCN.—A solution of this is sometimes used in place of Hydrocyanic Acid, 1 grain in 23 minims of water, being equivalent in strength to Acidum Hydrocyanicum, *B. P.* *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain. Hydrocyanic Acid of approximate strength to the *B. P.* (1 grain in 1 drachm) may be readily prepared by dissolving 20 grains of the Cyanide in 6 drachms of water, and, separately, 50 grains of crystallised Tartaric Acid in 3 drachms of spirit, and mixing the solutions. Cream of Tartar is precipitated, and the solution when filtered contains the required amount of Hydrocyanic Acid.

Potassii Hypophosphis, U. S. P.—See page 225.

Charta Nitrata, P. G., Nitrated Paper.—Porous paper soaked in solution of Nitrate of Potassium and dried. The fumes of these when burnt are inhaled for asthma.

Ozone Papers, used for a similar purpose, are prepared with Nitrate and Chlorate of Potassium. See also **Stramonium**, page 273.

Potassii Permanganas, B. P., Permanganate of Potassium. $KMnO_4$.—In dark purple prismatic crystals freely soluble in water, forming a rich purple solution. Used as an antiseptic, caustic, and deodoriser; internally it is very valuable in amenorrhœa and anaemia. It imparts a brown stain to all organic substances, by which it is readily decomposed; its solution should not therefore be kept in corked bottles. When made into pills, care should be taken not to combine it with any vegetable or animal ingredient; inorganic excipients should be used and the pills should be pearl-coated or sprinkled with French chalk.

Has been found very useful in amenorrhœa, given in **Pills** ($\frac{1}{2}$ to 2 grains, 3 or 4 times a day for a few days before the expected period).—*L. Jan. 6, '85.*

An injection of $\frac{1}{2}$ grain in 1 ounce has been recommended for gonorrhœa.—*L. '83, i, 45.*

Has also been recommended for snake-bite.—*L. '88, i, 1097, 1115.*

Liquor Potassæ Permanganatis, B. P.—1 per cent. It is half the strength of **Condy's Fluid**. **Dose**—2 to 4 drachms; its taste being very nauseous, however, it is never given in this form.

Sodii Permanganas.—A solution of this is green in colour, and is used as a disinfectant like the Potassium Salt. Being cheaper, is used for common purposes.

Calcii Permanganas.—See page 64.

Zinci Permanganas.—See page 301.

Potassii Phosphas. K_2HPO_4 .—A deliquescent powder. Acts as an alterative, and as such is given in urinary complaints and phthisis. **Dose**—1 to 10 grains.

Potassii Silicas.—See page 268.

Potassii Succinas, Succinate of Potassium.—A deliquescent powder; has been used as an internal haemostatic. **Dose**—5 to 10 grains.

Potassii Sulphis, U.S.P.- $K_2SO_4 \cdot 2H_2O$.

A deliquescent crystalline powder, freely soluble in water. Given for sarcina ventriculi. *Dose*—10 grains.

Potassii Telluras. Tellurate of Potassium.—Recommended as a remedy for night-sweats in phthisis. It does not produce toxic symptoms, but imparts a disagreeable tellurium odour to the breath. *Dose*— $\frac{1}{2}$ to $\frac{3}{4}$ grain, daily, in a pill.—*M. R.* Oct. '90.

Vienna Paste.—See page 211.

PTYCHOTIS.—See page 25.**PULSATILLA, U. S. P.**

Pasque-Flower.—The flowering herb of *Anemone Pulsatilla*, *A. pratensis*, and *A. patens* (Ranunculaceæ), imported chiefly from Germany. It should be carefully preserved and not kept longer than one year.

Pulsatilla paralyses the medulla oblongata and spinal cord, and excites irritation of the digestive tract and kidneys. It is used as an alternative and antispasmodic, and is valuable in amenorrhœa and hysteria, being often given in conjunction with Caulophylin (see page 74). It has also been found very valuable in orchitis and epididymitis, mitigating the pain and causing rapid recovery.—*L. Jan. 15, '87.*

Extractum Pulsatillæ Liquidum.—Miscible with water. *Dose*—1 to 5 minims.

Tinctura Pulsatillæ.—1 in 10, made from an equivalent quantity of the fresh plant. *Dose*—5 to 30 minims; in orchitis 2 to 3 minims every 2 hours to the extent of 30 minims daily; in amenorrhœa and dysmenorrhœa 1 minim every hour or 2 hours, a few days before the period. A lotion of 1 to 10 of water is useful for leucorrhœa.

Anemonin, *Pulsatilla Camphor*. C₁₅H₁₂O₆.—A white crystalline substance obtainable from various species of *Anemone*. It is volatile, insoluble in ether, slightly soluble in alcohol and water, more so in chloroform. It is given in bronchitis, asthma, and convulsive cough.
Dose—½ to ¼ grain, twice a day.

PYRIDINA.

Pyridine, C₅H₅N.—A liquid alkaloid obtained in the destructive distillation of bones. It is a colourless, mobile liquid, with a powerful empyreumatic odour, boiling at 242° F., sp. gr. 0·985, and is freely miscible with water, alcohol, ether, and chloroform. It is chemically related to several vegetable alkaloids, as Cocaine (see page 88), and forms crystalline salts with acids.

When added to a solution of sulphate of copper, it acts in a manner similar to ammonia, causing a pale blue precipitate, which dissolves in excess to a dark blue solution.

It is used to relieve the dyspnoea of asthma, and is believed to be the active agent in the various cigarettes, etc., recommended for that complaint. A drachm placed on a plate and the vapour of this inhaled twice or three times a day, eases respiration and soon effects a cure. Has also been used in angina pectoris and cardiac failure.—*L.* '88, ii. 438.

Dose—5 to 10 minims or more, daily. Must be distinguished from *Pyrodin*, the antipyretic.

PYRODIN.—See page 141.

PYROXYLIN.—See page 96.

QUEBRACHO.

White Quebracho.—The bark of *Aspidosperma Quebracho*, from Chili. It is used in bronchitis, phthisis, and to relieve the dyspnoea of asthma. It appears to assist the oxygenation of the blood as well as to stimulate the respiratory centres.

Extractum Quebracho Liquidum.—Not miscible with water. *Dose*—15 to 60 minims.

Tinctura Quebracho.—1 in 5. *Dose*— $\frac{1}{2}$ to 1 drachm.

Quebracho contains six different alkaloids, viz., *Aspidospermine*, *Quebrachine*, *Quabroahamine*, *Aspidospermatine*, *Hypoquebrachine*, and *Aspidamine*. Commercial Aspidospermine is a mixture of all six, and represents fairly well the activity of the drug.

Aspidosperminæ Sulphas.—Used hypodermically as an antipyretic and for relieving dyspnoea. *Dose*— $\frac{1}{4}$ to $\frac{1}{2}$ grain hypodermically.

QUINETUM.—See page 84.

QUINIDINÆ SULPHAS, U. S. P.

Quinidine Sulphate; Conquinine or Conchinin Sulphate. ($C_{20}H_{24}N_2O_2$)₂ $H_2SO_4 \cdot 2H_2O$.—The neutral sulphate of an alkaloid prepared from different species of cinchona, chiefly *C. pitayensis*. In white silky needles, similar to Sulphate of Quinine, having a very bitter taste. Slightly soluble in water, more soluble in alcohol, freely in dilute acids. It may be distinguished from Cinchonidine and Cinchonaine by its acid solution being fluorescent, and giving with chlorine water and ammonia an emerald green colour (thalleioquin); also from Quinine by its giving with chlorine water, ferricyanide

of potassium, and ammonia a permanent bulky precipitate, while the same reagents give with quinine only a red coloration which quickly disappears.

Quinidine Sulphate is a valuable antiperiodic, second to Quinine, 3 grains of the latter being equivalent to 5 of Quinidine (see page 85). It is useful in ague, etc.

Dose—1 to 20 grains.

QUININA.

Quinine; Chinin. $C_{20}H_{24}N_2O_2 \cdot 3H_2O$.—The most important alkaloid of Cinchona bark (see page 82). The pure alkaloid is official in the U. S. P., and is a white, amorphous or minutely crystalline powder, very sparingly soluble in water, freely in alcohol, ammonia, and dilute acids. Its acid solution is laevogyrate, fluorescent, and gives a green colour with chlorine water and ammonia. It may be distinguished from the other alkaloids of cinchona by the tests already referred to (see pages 85, 243). It is isomeric with Quinidine.

Quinine and its salts are powerful tonics and antiperiodics, and are employed very largely in India for ague and malarial fevers. They are also used for neuralgia.

Dose of Alkaloid—1 to 4 grains or more.

Quinine Salts and Preparations—

Oleum Morrhuae cum Quinina—See page 199.

Quininæ Arsenias.—Small white crystals, sparingly soluble in water. Contains about 66 per cent. of Quinine and 29 per cent. of Arsenic Acid.—*Ph. J. Aug. 31, '89.* It is given in chronic malarial fevers. *Dose*— $\frac{1}{16}$ to $\frac{1}{2}$ grain.

Quininæ Bisulphas.—See page 248.

Quininæ Carbolas.—A crystalline salt containing 77 per cent. Quinine and 23 per cent. Carbolic Acid, given for diarrhoea. *Dose*—2 grains. The Sulphocarbolate (see page 248) is commonly known as Carbolate of Quinine, and is more generally used.

Quininæ Chloras.—In small acicular crystals, slightly soluble in water. *Dose*—1 to 5 grains.

Quininæ Citras.—Like the Sulphate in appearance, sparingly soluble in water. *Dose*—1 to 5 grains or more.

Ferri et Quininæ Citras, B. P.—In greenish golden-yellow scales freely soluble in water, having a bitter chalybeate taste. Contains 16 per cent. of Quinine. *Dose*—5 to 10 grains.

Syrupus Ferri et Quininæ Citratis.—5 grains in 1 drachm.

Granular Effervescent Citrate of Iron and Quinine.—3 grains of the salt in 1 drachm.

Ferri, Quininæ, et Strychninæ Citras.—Contains 1 per cent. of Strychnine. Similar in properties to the Quinine and Iron salt. *Dose*—3 to 10 grains.

Quininæ Fluoridum.—Slightly soluble in cold, more so in hot water. Useful in spleen and rickets (see page 121). *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Quininæ Hydrobromas, U. S. P.—Colourless crystals, more soluble in water than the Sulphate. The Hydrobromate produces less cinchonism when given in large doses. *Dose*—1 to 5 grains or more.

Syrups containing Hydrobromate of Quinine, see page 120.

Quininæ Hydrobromas Acidæ.—Yellowish crystals, very soluble in water. It is also richer in alkaloid than the Sulphate, and therefore may be given as **Hypodermic Injection** (1 grain in 6 minims). *Dose*— $\frac{1}{2}$ to 2 grains; 3 to 12

minima of the Injection. Useful in ague when the alkaloid cannot be borne by the stomach.

Hypodermic Tablets contain $\frac{1}{2}$ grain each.

Quinines Hydrochloras, B.P.—Muriate of Quinine.—Acicular crystals, soluble 1 in 24 of water, and containing 83 per cent. of Quinine. Used similarly to the Sulphate, also a solution 1 in 800 as a germicide. *Dose*—1 to 10 grains.

Tinctura Quinines, B.P.—1 grain in 60 minims. *Dose*— $\frac{1}{2}$ to 2 drachms.

Quinines Hydrochloras Acidæ.—Yellowish crystals, very soluble in water, given hypodermically in the same doses as the Acid Hydrobromate.

Quinines Hydrofluosilicas.—A *basic* and a *normal* salt have been introduced. They are soluble in water and are suggested as antipyretics and antiseptics.

Quinines Iodas, Iodate of Quinine.—White silky needles soluble in water. *Dose*—1 to 5 grains.

Quinines Iodidum; Quinines Hydriodas; Quinines Hydriodium.—A *neutral* salt in pale yellow crystals, slightly soluble in water, and an *acid* salt in large yellow crystals freely soluble in water. *Dose*—1 to 5 grains. The acid salt may be given in Syrup of Iodide of Iron, 2 grains in 1 ounce of the syrup, in drachm doses.

Quinines Lactas.—A white powder, soluble in water. It is suitable for hypodermic injection.—*T. G. Apr. '89.* A 1 per cent. solution has been recommended as an injection for gonorrhœa. *Dose*—1 to 5 grains.

Quinines Oleatum.—See page 199.

Quinines Phosphas.—Crystals like the Sulphate, but denser. *Dose*—1 to 6 grains. See also Syrups, page 124.

Quinines Salicylas.—White silky needles, sparingly soluble in water, even with the addition of acid, therefore best given in pills. Used for diarrhoea, rheumatic gout, neuralgia, etc. *Dose*—2 to 6 grains in acid solution.

Quinines Sulphas, B. P., Sulphate of Quinine; Disulphate of Quinine, 'Quinine.'—In light silky acicular crystals, very bitter in taste, slightly soluble in water or alcohol, soluble in ammonia and dilute acids. It is a valuable tonic in small doses, and antiperiodic in large doses. *Dose*—1 to 5 grains as a tonic, 5 to 20 grains or more as an antiperiodic.

Incompatibles.—Tannin and vegetable astringents; alkalies and alkaline carbonates; Salicylate of Sodium in acid solution.

Quinine may be administered in solution, the salt being dissolved by the addition of an acid, preferably dilute sulphuric acid, about 1 minim for each grain of Quinine. Large doses are often considered more efficacious if given without acid; in such cases it may be given in cachets, or mixed in water. It is also conveniently given in the form of

Quinine Pills (Gelatine coated).— $\frac{1}{2}$, 1, 2, 3, 4, and 5 grains each.

Febricide Pills, an American remedy, contain Quinine Sulphate, Acetanilid, of each 2 grs., Cocaine Hydrochlorate $\frac{1}{2}$ grain. *Dose*—1 or 2, thrice daily, for malarial affections.

3 grains to 1 ounce has been recommended as an eye-lotion in diphtheritic ophthalmia.—*L.* '83, ii. 12. $\frac{1}{2}$ grain to 1 ounce is used as a nasal douche for hay-fever, a little placed in the palm hand and drawn up the nose.—*M.*

Notes on the Chemistry of Quinine and Cinebona Alkaloids.—*Ph. J.* xvii. 654; xviii. 517, 582; xix. 862.

Tests, etc., for Quinine.—*Ph. J.* xvii. 485, 505, 554, 585, 645, 974; xviii. 235; xix. 605.

Tinctura Quininæ Ammoniata, B. P.—1 grain in 60 minims, the Quinine being held in solution by ammonia. Not miscible with plain water, but forms a perfectly clear solution with aerated water, a soluble carbonate being formed. Useful in influenza and similar complaints. *Dose*— $\frac{1}{2}$ to 2 drachms.

Vinum Quininæ, B. P.—1 grain in 1 ounce of orange wine, with citric acid. *Dose*— $\frac{1}{2}$ to 1 ounce.

Warburg's Fever Tincture.—A tincture containing Quinine, Aloes, Opium, Rhubarb, Camphor, and Aromatics. A very valuable remedy in malarial fever. *Dose*—Half an ounce. The bowels to be emptied by means of any convenient purgative, one dose of the tincture, undiluted, then to be given, and repeated in the same way after 3 hours. All food and drink should be withheld and the patient kept in bed.

Pills are prepared each equal to 1 drachm of the Tincture, with or without Aloes.

Quininæ Sulphas Acida; Neutral or Soluble Sulphate of Quinine. Quinine Bisulphas, U. S. P.—In large colourless crystals, soluble in about 10 parts of water with blue fluorescence. *Dose*—1 to 5 grains. It is also used as a **Hypodermic Injection**, 1 grain in 12 minims. *Dose*—4 to 18 minims.

Quininæ Sulphocarbonas.—An amorphous white powder, sparingly soluble in water. Sometimes known as Carbolate of Quinine; the true Carbolate is made by direct combination of Quinine (alkaloid) and Phenol, the Sulphocarbonate by a similar combination of Quinine Sulphate with Phenol. It combines the action of Quinine with that of the Sulphocarbonates. *Dose*—1 to 6 grains.

Quininæ Tannas.—A whitish amorphous powder, sparingly soluble in water. Being tasteless, it is recommended for children. *Dose*—1 to 4 grains, in milk.

Quininæ Tartras.—Sparingly soluble in water. *Dose*—1 to 4 grains.

Quininæ Valerianas.—In white crystals or powder, with a slight odour of Valerian. Slightly soluble in water; best administered in pill. Given in hysteria and nervous headache. *Dose*—1 to 4 grains.

Hyperchinain.—A new synthetical compound, at present under investigation, said to have effects similar to Quinine, and therefore suggested for malarial fevers. It is a pale yellow powder, soluble in water, having a bitterish but not unpleasant taste. It is the Hydrochloride of Metoxymethyl-dichinoxylin, and is constitutionally related to Quinine. It is non-poisonous and has no bad effects if given in small doses. *Dose*—Not fixed; has been given to dogs in doses of $1\frac{1}{2}$ grains without bad results.

RANDIA.

Mainphal, Gelaphal.—The fruit of *Randia dumetorum* (Rubiaceæ), a shrub common in India, has long been used in India as an emetic and as a remedy for dysentery, also as a fish poison. As it contains valerianic acid it has recently been recommended as an antispasmodic in the form of

Tinctura Randiae Æherea.—1 in 5, prepared with spirit of ether. Has a bright maize colour, and characteristic odour and taste, the valerian odour becoming very apparent on diluting with water and adding acetic acid. *Dose*—15 to 60 minims as an antispasmodic.—*L. Mar. 2, '91 : M. R. May '91.*

RESORCIN.

Resorcinol ; Meta-di-Hydroxybenzene.
 $C_6H_4(OH)_2$.—A derivative of phenol or benzol, isomeric with Pyrocatechin and Hydroquinone. White crystalline prisms, very soluble in water, alcohol, and ether. It acquires a faint reddish colour by keeping or by exposure.

A powerful antipyretic and antiseptic, externally caustic. As an anti-pyretic its action is similar to Quinine, but not so lasting; it also

causes profuse perspiration. It should be given in doses of 15 to 30 grains administered at intervals to avoid toxic effects. As an antiseptic a 1 per cent. solution is a useful surgical dressing and also makes a good lotion for conjunctivitis. 5 per cent. forms a valuable non-irritating injection for gonorrhœa and inflammatory affections of the bladder, while a still stronger solution may be used for syphilitic sores and skin diseases. For acne an ointment consisting of Resorcin 2½ to 5, Oxide of Zinc 5, Starch 5, and Vaseline 10, applied as constantly as possible, is said to effect a rapid cure. In eczema of the eyelids, 9 grains to 1 ounce of Cold Cream, applied 3 or 4 times a day, avoiding application of water to the lids, has been recommended.

Plaster Mulls contain ½ grain to the square inch.

Dose—5 to 30 grains.

Antidotes.—Red wine; white of egg; stimulants; wash the stomach with Soda or Lime Water; Atropine; Amyl Nitrite.

Resorcin is very useful in diarrhoea in doses of 15 grains given in Castor Oil; also in cholera infantum, doses of 1 or 2 grains with one drachm of Infusion of Chamomile every two hours being found very beneficial.

From 10 to 20 grains given early is said to prevent the nausea and giddiness of persons liable to sea-sickness, enabling them to sleep comfortably, and promoting appetite and digestion.

A 10 per cent. solution brushed on every hour during the day, and every 2 hours during the night, is useful in diphtheria, a 5 per cent. solution being sprayed through the room.—*L. Dec. 20. '90.*

Thioresorcin. $C_6H_5(8H)_2$.—Obtained from Resorcin by treatment with sulphur in the presence of an alkaline solution. A yellowish-grey amorphous powder, insoluble in the ordinary solvents, soluble in alkaline solutions. It has

been used as an odourless substitute for Iodoform.
—*Ph. J.* Mar. 2, '89.

RHAMNI FRANGULÆ CORTEX, B. P.

Frangula Bark; **Frangula**, U. S. P.; **Buckthorn**; **Black Alder**.—The dried bark of *Rhamnus Frangula* (Rhamnaceæ), collected at least one year before being used. It contains a glucoside *Frangulin*, and *Emodin*; the latter, a decomposition product of the former, is also found in rhubarb root. In fresh bark no *Frangulin* is found, and at most only traces of *Emodin*.—*Ph. J.* Sept. 1, '88; *Journ. Chem. Soc.* Feb. '90.

Frangula is a tonic laxative, specially suited for delicate persons, as it does not cause griping or irritation, and the dose does not require increasing after continued administration. It is useful in cases of haemorrhoids.

Extractum Rhamni Frangulæ, B.P.
—Solid extract. *Dose*—15 to 60 grains.

Extractum Rhamni Frangulæ Liquidum, B.P.—Miscible with water. *Dose*—1 to 4 drachms.

Syrupus Rhamni Frangulæ.—*Dose*—1 to 4 drachms.

Aperient Fruit Lozenges.—A proprietary preparation made from *Rhamnus Frangula*.

RHAMNI PURSHIANI CORTEX.—See page 72.

RHINACANTHUS.

Tong Pang Chong; **Gachkaran**.—The leaves and root of *Rhinacanthus communis* (Acanthaceæ), a small shrub common in Western India. It contains 1·87 per cent. of a red resinous sub-

stance *Rhinacanthin* ($C_{14}H_{18}O_7$), apparently related to chrysophanic acid.

It is used as a remedy for ringworm, especially the variety known as *dhobie's itch*. The leaf or other part of the plant is made into a paste with lime-juice and applied to the affected part for several days.

Succus Rhinacanthi.—The expressed juice. It is useful for ringworm and other skin diseases of a parasitic nature.

RHUS.

Rhus Toxicodendron, U. S. P. Poison Oak; Poison Ivy.—The leaves of *Rhus Toxicodendron* (Anacardiaceæ), of North America.

Used in rheumatism and obstinate skin affections. It has the properties of a stimulant narcotic, and promotes the secretory functions of the skin and kidneys. It is poisonous.

Antidotes—Emetics; demulcents; alkalies.

Extractum Rhois Liquidum.—Not miscible with water. *Dose*—3 to 30 minimæ.

Tinctura Rhois.—Made in America from the fresh leaves, 1 in 2; in Germany from the expressed juice 5 in 11. *Dose*—2 to 10 minimæ.

Rhus Plaster is also imported.

RHUS AROMATICA.

Sweet Sumach.—The root bark of *Rhus aromatica* (Anacardiaceæ), an American shrub. Useful as an astringent in atonic diarrhoea and to check haemorrhage. It is also a valuable remedy in the nocturnal enuresis of children, acting almost as a specific, and producing no harmful effects.—*L.* Nov. 22, '90; *M. R.* Dec. '90 & Jan. '91.

Extractum Rhois Aromaticæ Liquidum.—Not miscible with water. *Dose*—5 to 30

minims; for children up to 2 years, 5 minimis; 2 to 6 years, 7 to 10 minimis.

The fruit of *Rhus coriaria*, a Persian plant known as *Sumak*, is sold in the bazaars. It is used by some classes of natives as an astringent in diarrhoea, dysentery, etc., and has also found application in checking diuresis and might be experimented with as a substitute for *R. aromatica*. For description, etc., see *Pg. Ind.* i. 372.

RHUS GLABRA, U. S. P.

Sumach.—The fruit of *Rhus glabra* (Anacardiaceæ), America. Tonic, astringent, and antiseptic. Used as a gargle for inflammation of the throat, and as an astringent in dysentery, gonorrhœa, etc. Also used as a diuretic and refrigerant in febrile diseases and diabetes.

Extractum Rhois Glabre Fluidum, U. S. P.—Not miscible with water. *Dose*—1 to 2 drachms.

RUMEX, U. S. P.

Yellow Dock.—The root of *Rumex crispus* (Polygonaceæ), and other species. It contains chrysophanic acid.

Tonic, alterative, and slightly laxative like rhubarb. It is given in scrofulous skin diseases, also in hepatic congestion and dyspepsia.

Extractum Rumicis Fluidum, U. S. P.—Not miscible with water. *Dose*— $\frac{1}{2}$ to 1 drachm.

Tinctura Rumicis.—1 in 10.—*Dose*—1 to 10 minimis or more.

Rumicin.—The powdered extractive. *Dose*—1 to 4 grains.

SACCHARINUM.

Glusidum ; **Gluside**, B. P. (**Ad.**) ;
Glusimide ; **Benzoyl-Sulphonic Imide**,
 $C_6H_5CO.SO_2.NH$.—The sweet imide derivable
from the toluene of coal-tar.

A light, white powder, with an intensely sweet taste.* It is very slightly soluble in water, more so in boiling water, freely in solution of ammonia, or in solution of bicarbonate of sodium, in the latter case with evolution of carbonic acid gas (see below). It forms sweet crystalline salts with alkaloids and metallic bases.

The intense sweetness of Saccharin, together with its harmlessness when taken internally, render it very useful for disguising the taste of nauseous drugs, as salicin, cascara sagrada, etc., and also as a flavouring agent in the food of diabetic patients. Saccharin possesses from 250 to 300 times the sweetening power of sugar; a solution containing $\frac{1}{4}$ grain in 1 drachm is equal in sweetening power to simple syrup.

Saccharin is quite harmless even in large quantities; and does not interfere with the digestive processes even if taken for an extended period.—*L. Nov. 17, '85; Ph. J. Dec. 1, '88.*

Dose— $\frac{1}{2}$ to 2 grains or more.

Cocainæ Saccharis.—See page 92.

Elixir Saccharini, B. P. C.—24 grains to 1 ounce with Bicarbonate of Sodium. **Dose**—5 to 20 minims; 20 minims are sufficient to flavour a 4-ounce mixture.

Soluble Saccharin, B. P. (**Ad.**) Soluble Gluside. $C_6H_5CO.SO_2.NNa$.—Saccharin rendered soluble by treatment with Bicarbonate of Sodium, 100 parts being equal to nearly 90 parts of Saccharin. It is freely soluble in water. **Dose**— $\frac{1}{2}$ to 2 grains or more.

* Commercial Saccharin is a mixture containing about 60 per cent of benzoyl-sulphonic imide, standardised to a definite strength of sweetness. A *Saccharin. puriss.* is prepared which is 500 times as sweet as sugar.—*Ph. J. Dec. 29, '99.* The actual sweet principle is soluble in ether, and may be separated by means of that solvent.

Tabellæ Saccharini, Saccharin Tablets.— $\frac{1}{2}$ grain each, in combination with Bicarbonate of Sodium. One or two are sufficient to flavour a cup of tea, or disguise the bitterness of quinine, etc.

Saccharinated Preparations, in which Saccharin takes the place of sugar (as in confections, syrups, etc.) are prepared, of which the following have been recommended :—

Confectio Sulphuris Glusidata, *B. P.* strength.

Emulsio Olii Morrhumi Glusidata, *B. P.* C. strength.

Mistura Spiritus Vini Gallici Glusidata, *B. P.* strength.

Saccharinated Seidlitz Powders and **Effervescent Preparations** may also be prepared.

In all cases in which sugar cannot be tolerated by the patient these are very useful.

Saccharin should not become black on addition of strong sulphuric acid, nor should its solution in caustic potash reduce Fehling's solution. These tests distinguish it from cane and grape sugars respectively.

Fused with caustic soda, Saccharin becomes partially converted into salicylic acid, forming salicylate of sodium, which gives the characteristic purple colour with perchloride of iron.

SAFROL.—See page 185

SALICINUM, B. P.

Salicin. $C_{15}H_{14}O_7$.—A glucoside obtained from the bark of various species of willow, chiefly *Salix alba* (Salicaceæ), also from various species of *Populus*. Colourless shining crystals, odourless and having a very bitter taste, soluble 1 in 28 of water, 1 in 60 of spirit, insoluble in ether. It is coloured red by sulphuric acid, and

emits the odour of meadow-sweet (Salicylol) when ignited. Salicin may be prepared artificially from helicin or populin.

It acts as an antipyretic and tonic, and is given in ague and acute rheumatism, especially the latter. It splits up under the influence of the ferments in the body into saligenin and glucose, the former becoming oxidised into salicylic acid.

Dose—5 to 30 grains.

BALIX NIGRA.

Black or Pussy Willow.—The bark of this tree, indigenous to North America, has been used as a sexual and general sedative. It has been recommended for ovarian hyperæsthesia, spermatorrhœa, etc., having all the advantages of Bromide of Potassium without acting as a depressant.—*L. Sept. 24, '87.*

Extractum Salicis Nigræ Liquidum.—Not miscible with water. *Dose*— $\frac{1}{2}$ to 1 drachm.

SALOLUM.

Salol. $C_7H_5O_3C_6H_5$.—A Phenyl Ether of Salicylic Acid. It occurs as a white powder, almost insoluble in water, tasteless and of aromatic odour, somewhat resembling wintergreen. It is a powerful antipyretic and antisепtic, and is recommended as a substitute for Salicylate of Sodium, where that salt cannot be tolerated. It remains intact in the stomach, but splits up in the duodenum into its components, Phenol and Salicylic Acid. No vomiting or toxic symptoms follow its use; but after a few days the urine becomes of a greenish black colour. In acute rheumatism it has the effect when given in doses of 15 grains 6 or 8 times a day, of bringing down the temperature, and relieving the pain in the joints in from 24 to 48 hours. The insoluble nature of Salol makes it

peculiarly applicable as a dusting powder for excoriated surfaces and foetid wounds, and has led to its use as a substitute for Iodoform. Suspended with tragacanth or starch mucilage it forms a good mouth wash.

Dose—5 to 30 grains.

Used in sciatica, 8 grains in the evening, and 16 grains at midnight, caused the patient to fall asleep and remain free from pain.—*O. & D.* Mar. '87.

Given internally in gonorrhœa in 10 to 30 grain doses, 3 times daily; 15 per cent. of the cases were cured and 50 per cent. improved.—*L. Mar.* 22, '90.

Being very soluble in oils, it may be administered for gonorrhœa dissolved in copaiba or sandal oil, to the extent of one-third of the dose.—*Ph. J.* Mar. 29, '90.

In 22 cases of pharyngeal inflammation, 15 to 20 grain doses acted very satisfactorily.—*T. G.* Feb. 15, '90.

When the administration of Salol caused no appearance of salicylic acid in the urine, occlusion of the pyloris has been successfully diagnosed.—*B. M. J.* June 14, '90.

Salol has been found to destroy the cholera bacillus.—*Ph. J.* Mar. 2, '89.

Has been used in several cholera hospitals in Bombay, Madras, Hyderabad, etc., with great success; the phenol liberated in the intestine acting as an antiseptic.—*I. M. G.* May '90; *T. G.* Oct. '90; *M. R.* Nov. '90; *Ed. M. J.* Dec. '90.

An application containing Salol 4, Ether 4, Collodion 30, has been recommended for acute rheumatism.—*Ph. Rec.* May 5, '90.

Salol Camphor.—A viscous liquid formed by mixing Salol 3, Camphor 2. It is used similarly to Naphthol Camphor (see page 196), as an antiseptic. It is insoluble in water.

Betol; Naphthalol; Naphthol-Salol.
 $C_7H_5O_3$. $C_{10}H_7$.—The salicylate of β -Naphthol Ether. It is constituted like Salol, but contains β -Naphthol in place of Phenol. In white scales, odourless, tasteless, and insoluble in water, but soluble in hot alcohol. It has been found serviceable in gonorrhœal cystitis and various forms of vesical catarrh; also in acute rheumatism, in which it is borne as well as salol and acts better. Bougies (1 to 4) have been used in gonorrhœa. *Dose*—3 to 8 grains.

Cresalol.—See page 11.

SANTALI OLEUM, B. P.

Oil of Sandalwood; Yellow Santal Oil.—The oil distilled from the wood of *Santalum album* (Santalaceæ), a tree common on the Western Ghats of India. It is a pale yellow oil with a peculiar persistent odour, freely soluble in rectified spirit. Sp. gr. 0.970 to 0.990, the oil distilled in India showing a higher sp. gr. than that distilled in Europe. The wood contains 2 to 2.5 per cent. of oil.

Santal Oil is largely used in the treatment of gonorrhœa and gleet, being administered either as capsules or mixture.

Dose—10 to 30 minims.

Capsules of Santal Oil.—5 and 10 minims each.

Mistura Olei Santali.—May be made of any desired strength up to 1 in 8, emulsified with Tragacanth or Acacia. *Dose*—According to strength.

Sandalwood is largely used in India as a domestic remedy among the natives, also as a perfume for burning. It is known as *Safed Chandan*, to distinguish it from *Lal Chandan* or Red Sandalwood, the product of *Pterocarpus Santalinus*. A Fluid Extract is used in America, in doses of $\frac{1}{2}$ to 2 drachms, in place of the oil.

SANTONINUM, B. P.

Santonin. C₁₅H₁₄O₃.—A crystalline neutral principle obtained from Santonica (wormseed) the flower heads of *Artemisia maritima*, var. *Stechmannia*, from Russia. Colourless crystals, sparingly soluble in water, more so in rectified spirit, freely in chloroform. Taste feebly bitter. It turns yellow by exposure to light.

It is a valuable anthelmintic, being suitable for both round and thread-worms, but is inoperative against tape-worm. It acts by causing the worms to leave their abode and wander into the large intestine, from which they may be removed by a purgative. It is best given in castor oil for children. Has also been recommended as an emmenagogue. It often affects the vision, especially in large doses, causing objects to appear green or yellow; it also colours the urine orange.

Dose—2 to 6 grains. One dose should be given every other night to 3 doses, followed in the morning by a brisk cathartic.

Trochisci Santonini, B. P.—1 grain in each.

Trochisci Santonini et Calomelanos.—Santonin and Calomel Lozenges.—The above combined with Calomel.

Atropinæ Santonas.—See page 50.

Sodii Santonas, Sodii Santoninas, U. S. P.—A combination of Santonin with Caustic Soda. In colourless crystals, soluble in water, having a saline and slightly bitter taste. It is given in place of Santonin. *Dose*—5 to 10 grains.

Santoninoxim.—A compound obtained by the action of hydroxylamine upon Santonin in an alkaline solution. It is said to be less absorbable and non-toxic, but equally active if administered in double or triple doses. Recommended in place of Santonin as being free from

injurious effects.—*Ph. J.* June 29, '89; *O. & D.* Sept. 27, '90.

Although the Santonin used in India is all imported from Europe, the plant is brought from Persia and Afghanistan and sold in the bazaars, where it is known as *Kirmáni* or *Kirmálá*.—*Pg. Ind.*

SAPO VIRIDIS, U. S. P.

Green Soap; German Soft Soap;
Sapo Kalinus.—A potash soap, similar to *Sapo Mollis, B. P.*, but usually made with Linseed Oil. It is of a brownish-green colour, and should be free from alkali. It is used in some forms of skin diseases.

Tinctura Saponis Viridis, U. S. P.—
 Green Soap 65, Oil of Lavender 2, Alcohol to 100.

Mollinum, Mollin.—A soft soap, containing about 17 per cent. excess of fatty matter. It is of a white colour, inodorous, of unctuous consistency, and is recommended as a basis for ointments owing to the readiness with which it may be washed off with water. Not being a grease, it imparts no stain to linen. It mixes well with most of the usual ingredients of ointments.

It has not proved satisfactory as an ointment base.—*Ph. J.* Dec. 21, '89.

SCOPOLA.

The rhizome of *Scopola carniolica* (*S. atropoides*), Solanaceæ, a plant growing in Central Europe. It contains *Hyoscyamine*, along with vegetable cholesterol and a fluorescent substance, *Scopolatin*, and is similar to Belladonna both in composition and properties. The rhizome of *S. Japonica* also resembles Belladonna, the so-called Scopoleine obtained from it being a mixture of atropine, hyoscine, and hyoscyamine.

Scopola is recommended as being equally efficacious with Belladonna, without causing dryness of the throat. The following preparations are recommended :—

Extractum Scopolæ Alcoholicum.—Containing 2 per cent. of alkaloid. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Extractum Scopolæ Liquidum.—Standardised to contain 0.25 per cent. of alkaloid. *Dose*—1 to 5 minims.

Emplastrum Scopolæ.—1 (Alcoholic Extract) in 5.

Linimentum Scopolæ.—Similar to Liniment of Belladonna, containing 4 of Liquid Extract in 5.

Tinctura Scopolæ.—4 (Liquid Extract) in 25. *Dose*—5 to 30 minims.

Unguentum Scopolæ.—1 (Alcoholic Extract) in 10.

The above preparations are intended to take the place of similar preparations of Belladonna.

For full details as to chemistry, pharmacy, therapeutics, natural history, and histology of Scopola, see *Ph. J.* Dec. 14, 89.

SENNA.

The leaflets of two species of *Cassia* (Leguminosæ) are recognised by the *B. P.* The Senna imported from Alexandria (Alexandrian Senna) is the product of *Cassia acutifolia*, while Indian or Tinnivelly Senna is obtained from *C. angustifolia*, cultivated in Southern India. *C. obovata*, or jungle senna, grows wild very abundantly in India, and is used as a substitute for the official Senna.

The active principle of Senna is a glucoside, **Cathartic Acid**, which when isolated occurs as a brown amorphous powder, soluble in water, insoluble in spirit. It is sometimes given as a purgative as it does not possess the nauseous and griping properties of the drug, and is easily

administered. It is very unstable, and is readily oxidised and rendered inert by heat. *Dose*—4 to 8 grains.

Official Preparations—

Confectio Sennæ (Electua-

rium Lenitivum) .. *Dose*—1 to 2 drachms.

Infusum Sennæ 1 to 2 ounces.

Mistura Sennæ Composita

(Black Draught) 1 to 1½ ounce.

Syrupus Sennæ 1 to 2 drachms.

Tinctura Sennæ 1 to 4 drachms.

The first four are popular remedies; the Tincture is inert, the active principle being insoluble in rectified spirit.—*Ph. J.* Sept. 21, '89.

Unofficial Preparations—

Elixir Sennæ, B. P. C.—*Dose*—1 to 3 drachms. In this the cathartic acid is preserved in its full activity, the preparation being only slightly heated.

The nauseating and griping properties of Senna are due to a resin and an oil which have no purgative properties. The following preparations have been used to obviate these unpleasant qualities.

Extractum Sennæ Liquidum.—Prepared by maceration and cold pressure, and flavoured with aromatics. The cathartic acid is unoxidised, and the resin left behind in the marc. *Dose*—2 drachms.

Extractum Sennæ Fluidum Deodora-
tum.—The Senna is first exhausted with alcohol to remove the resin and oil, the marc is then dried and exhausted with water to dissolve the cathartic acid. *Dose*—1 to 2 drachms.

Sennæ Legumina, Senna Pods.—The fruit of the Senna plant contains cathartic acid but no resin or oil, consequently presents no difficulties in the way of making a suitable preparation. It is also more readily exhausted with cold water than the leaves, which have a more impervious epidermis. It is employed as

Extractum Sennæ Leguminum Liquidum.—Prepared with cold water. It is considered specially suitable for children. *Dose*—For children, $\frac{1}{2}$ to 1 drachm in water at bed-time; adults, 1 to 2 drachms.—*L. July 27, '89; Ph. J. Aug. 31, Oct. 12, & Nov. 16, '89.*

SIEGESBECKIA.

The Indian plant, *Siegesbeckia orientalis* (Compositæ), the properties of which do not appear to be known to the natives, has recently been introduced into European practice. It contains a bitter principle, *Darutyne*, which seems to be a derivative of salicylic acid.

Siegesbeckia has been recommended in conjunction with Iodide of Potassium as a remedy for syphilitic and serofulous affections, while the juice of the fresh herb is used as a dressing for wounds, over which it dries, leaving a varnish-like coating.

A Tincture has been used with success as an application in ringworm and other skin diseases, having the advantage of not being greasy, and at the same time affording relief to the dryness and tension of the skin. Equal parts of the Tincture and Glycerine are to be rubbed over the affected parts night and morning.—*B. M. J. June 25, '87.*

SIMULO.

The fruit of *Capparis coriacea* (Capparidaceæ), of Bolivia and Peru. Has been used with some success in epilepsy, a number of cases being reported in which improvement was manifest, although its claims as a remedy for this disease have yet to be established.—*L. Mar. 31, '88; T. G. June '89.*

The powdered drug is taken in wine, or a Tincture may be used, the latter being given in doses of $\frac{1}{2}$ to 2 drachms 3 times a day.

SODIUM.

The Sodium salts possess a less depressing action on the heart than the Potassium salts, and have a much lower diffusion-power than the latter. They are all easily soluble in water. The following are those more recently introduced into therapeutics :—

Sodii Arsenias, B.P. Na_2HAsO_4 , with 12 or 7 molecules of water of crystallisation.—This salt is very liable to effloresce on exposure to the air, consequently it is of uncertain arsenical strength. It is used in skin affections and nervous diseases, in a similar manner to Liquor Arsenicalis, and is the active ingredient in the **Arsenical Cigarettes** used for asthma. It is also given with Lithia Water for diabetes (see page 180). *Dose*— $\frac{1}{10}$ to $\frac{1}{5}$ grain.

Liquor Sodii Arseniatis, B.P.—1 per cent., made with *anhydrous* Arseniate. *Dose*—5 to 10 minims.* **Pearson's Solution** contains 1 of crystallised Arseniate of Sodium in 600.

Antidotes.—Moist Peroxide of Iron, or Dialysed Iron (see page 123); Emetics, stomach pump, mucilaginous drinks; Ammonia; artificial respiration and cold affusion.

Sodii Benzoas, B.P. (Ad.) $\text{NaC}_6\text{H}_5\text{O}_2$.—A white crystalline powder, used as an antipyretic and antiseptic, also in rheumatism and gout. A 5 per cent. solution has been used as a spray for phthisis. In rheumatism, 15 to 20 grains every 2 or 3 hours has proved successful, continuing the treatment in diminished doses for 24 or 48 hours after the rheumatic symptoms have disappeared.—*B. M. J.* '81, i. 336. *Dose*—10 to 30 grains; has been given up to 4 drachms daily.

Sodii Bromidum, B.P. NaBr .—A granular white powder, slightly deliquescent. Its action is similar to that of Bromide of Potassium

* Liquor Sodii Arseniatis contains about half as much Arsenium as Liquor Arsenicalis.

but less depressant. It is used for epilepsy and sea-sickness. *Dose*—10 to 30 grains.

Mixir Sodii Bromidi.—10 grains in 1 drachm. *Dose*—1 to 2 drachms.

Sodii Chloras, U. S. P. NaClO_3 .—In hard white cubical crystals, or crystalline powder. Used in place of Chlorate of Potassium for uloeration of the gums, etc.

Gargarisma Chlori, Chlorine Gargle, contains free chlorine, and is prepared from Chlorate of Sodium and Hydrochloric Acid.

Trochisci Sodii Chloratis.—3 grains in each. More palatable than Chlorate of Potassium Lozenges.

Pulvis Salinus Anticholeraicus (Stevens).—Bicarbonate of Sodium 80 grains, Chloride of Sodium 20 grains, Chlorate of Potassium 7 grains, for one dose. Given frequently in water to arrest the pain and purging of cholera.

Sodii Citras.—Small crystals, given in place of Citrate of Potassium as a cooling saline. *Dose*—10 to 60 grains.

Sodii Cresotinas.—See page 266.

Sodii Ethylas.—A deliquescent salt, used as a caustic. It is prepared from the following:

Liquor Sodii Ethylatis, B. P.—Prepared by dissolving metallic Sodium in Ethylic Alcohol. A valuable caustic for naevi and other vascular growths, causing little or no pain. No water should be allowed to touch the part under treatment. It has also been used very successfully in lupus.

Sodii Fluosilicas, Fluo-silicate or Silico-fluoride of Sodium.—An odourless, non-irritating antiseptic and disinfectant. A 2 per cent. mixture with water may be used as an antiseptic dressing, or as an injection in gonorrhœa or a gargle in diphtheria.—*B. M. J.* May 19, '88 & Feb. 15, '90; *Iph. J.* Mar. 1, '90.

The preparation known as **Salufer** consists of a solution of this salt.

Salufer Cubes, each equal to one quart of solution, are also sold.

Sodii Hippuras.—A white amorphous powder, readily soluble in water. Recommended as a solvent for urates in gout, gravel, and calculus. *Dose*—5 to 30 grains.

Sodii Hyposulphis, U. S. P., Hyposulphite or Thiosulphate of Sodium. $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$.—Colourless crystals, easily distinguished from other Sodium salts by adding hydrochloric acid to its solution, when sulphur is precipitated and sulphurous acid gas given off. Used in syphilitic and rheumatic affections, and sarcina ventriculi, also as a lotion (1 in 10) for parasitic skin diseases. If sulphuric acid be added to the lotion the latter will evolve sulphurous acid gas. *Dose*—10 to 60 grains.

Sodii Sulphis, B. P. $\text{Na}_2\text{SO}_3 \cdot 7\text{H}_2\text{O}$.—Colourless efflorescent crystals, the solution of which gives off sulphurous acid gas on addition of acid, but does not deposit sulphur. It is used similarly to the last. *Dose*—10 to 60 grains.

Sodii Iodidum, B. P. NaI .—A white deliquescent powder. It is used for the same purposes as Iodide of Potassium, than which it is said to be more assimilable. *Dose*—3 to 20 grains.

Sodii Nitris, B. P. (Ad.). NaNO_3 .—A white or yellowish-white deliquescent crystalline salt. In epilepsy and angina pectoris it acts similarly to Nitrite of Amyl or Nitroglycerine, also in bronchitis and asthma, especially combined with Hyoscyamus.—*L.* '90, i. 240; *Ph. J.* July 3, '86. *Dose*—2 to 5 grains.

Sodii Paracresotas, Paracresotate or Cresotinate of Sodium.—A crystalline powder, soluble 1 in 24 of water, has been used as an antipyretic, being safe and reliable. Its action is very similar to that of Salicylate of Sodium, and it has found

special application for children. *Ph. J.* Feb. 1, '90. *Dose*—2 to 3 grains in 1 ounce mixture, a teaspoonful every 2 hours for children; larger doses (up to 2 drachms of the salt) may be safely given to adults.—*H. July, Nov. '90 & Jan. '91.*

Paracresotic Acid is said to be present as an impurity in artificial Salicylic Acid, and is stated to have toxic effects. This however has been disproved, as the Sodium salt has been largely experimented with and no toxic symptoms have been shown. The impurity in Salicylic Acid, therefore, has yet to be determined.—*H. Nov. '90; B. M. J. Nov. 29 & Dec. 1, '90.* See also **Acidum Salicylicum** (page 16), and **Sodii Salicylas** (below).

Sodii Permanganas.—See page 240.

Sodii Phosphas. B. P. $\text{Na}_3\text{HPO}_4 \cdot 12\text{H}_2\text{O}$.—Known also as 'Tasteless Aperient Salt.' In colourless crystals, efflorescent. Acts as a mild purgative. *Dose*— $\frac{1}{2}$ to 1 ounce, in gruel or broth.

Sodii Phosphas Effervesrens, B. P. (Ad.).—A granular preparation, containing 50 per cent. of Phosphate of Sodium. *Dose*— $\frac{1}{2}$ to $\frac{3}{4}$ ounce.

Sodii Phosphas Exsiccata.—*Dose*—10 grains to 4 drachms.

Sodii Salicylas, B. P.—Colourless crystalline scales, that made from the natural acid (see page 16) being in silky crystals, and usually slightly yellow. It is more soluble and less irritating than Salicylic Acid, and is given in rheumatism, sciatica, and some forms of diabetes.

Dose—10 to 30 grains.

As a snuff, Salicylate of Sodium 80 grains, Cocaine Hydrochlorate 22 grains, and Boric Acid 1 ounce, has been said to cure nasal catarrh in one application.—*Ph. J. Nov. 30, '89.*

One drachm in 3 pints of water as an enema has proved very successful in dysentery in India.—*M. R. Nov. '90.*

The artificial salt is more suitable for combining with *Spiritus Ætheris Nitrosi* or *Spiritus Ammoniae Aromaticus* than the natural salt, as it produces less coloration.—*Ph. J.* Mar. 23, '90.

Purification of artificial Salicylate of Sodium.—*J. S. C. I.* June 30, '90.

Chemical notes on the same.—*Ph. J.* Oct. 27, '88 & Aug. 31, '89.

An investigation of the constituents of artificial Salicylic Acid of commerce, and its therapeutics. *Ph. J.* Nov. 22, '90; *C. & D.* Nov. 15, '90; *H. Nov.* '90.

Sodii Salicylsulphonas.—A white crystalline, odourless salt, acid to the taste. It is an antiseptic, ranking below Salicylic Acid, but above Salicylate of Sodium in this respect.—*Ph. J.* Nov. 30, '89.

Sodii Dithiosalicylas.—A greyish-white hygroscopic powder, soluble in its own weight of water. It is a Sodium Salt of Dithiosalicylic Acid (Salicylic Acid combined with Sulphur). Superior to Salicylate of Soda in the treatment of articular rheumatism, having the advantage of stronger action and consequently smaller doses, tolerance by the stomach, and absence of unpleasant after effects. A 20 per cent. solution will kill anthrax bacilli in 45 minutes.—*K. July* '90; *Ph. J.* June 29, '89.

Dose—3 grains morning and evening.

Two isomeric salts are known as I. and II., the latter is the one used medicinally.

Sodii Santonas.—See page 259.

Sodii Silicas.—A solution of this, known as 'Water Glass' or 'Soluble Glass,' has been used as an antiseptic for injections in leucorrhœa, gonorrhœa, ozæna, cystitis, etc., also to impregnate bandages in place of starch. It is a viscous, colourless solution.

Potassii Silicas.—Goes by the same names as the last, and is used for the same purposes. It is less viscous, and is preferred for bandages,

and also as a paint for erysipelas, diluted with from 4 to 11 parts of water. Care must be taken that it is neutral.

Sodii Sulphas, B. P. Glauber's Salt.— Colourless transparent crystals. Used as a cooling aperient, for which purpose the dried salt is preferable. *Dose*—Ordinary salt $\frac{1}{2}$ to 1 ounce; dried salt, $\frac{1}{2}$ to 2 drachms.

Sodii Sulphas Effervescent, B. P. (Ad.).—A granular preparation containing 50 per cent. Sulphate of Sodium. *Dose*— $\frac{1}{2}$ to $\frac{1}{4}$ ounce.

Magnesii Sulphas Effervescent, B. P. (Ad.).—Similar to the last but containing Sulphate of Magnesium (Epsom Salts), 50 per cent. A pleasant purgative. *Dose*— $\frac{1}{2}$ to 1 ounce.

Pulvis Soda Tartaratae Effervescent, B. P. (Ad.). Seidlitz Powder.—Contains
 Tartarated Soda 120 grains
 Bicarbonate of Sodium.. 40 grains
 wrapped in blue paper.
 Tartaric Acid 38 grains
 wrapped in white paper.

In hot climates it has been found better to mix the above powders in quantity and preserve in a stoppered bottle, using each time the equivalent of the above. See also *Ph. J.* Dec. 21, '89.

Sodii Sulphocarbolas, B. P.—In white crystals, soluble in water. Used in the dyspepsia of phthisis, flatulence, diphtheria, cholera, etc. Has also been recommended for small-pox. *Dose*—10 to 15 grains.

Sodii Sulpho-ichthyolas.—See page 158.

Sodii Taurocholas.—A whitish amorphous powder, prepared from ox bile or pig's bile. Has been recommended for gouty obesity and dyspepsia. Should be administered in the form of keratin-coated pills to prevent solution until it reaches the intestine. *Dose*—2 to 6 grains.

Sodii Sulpho-vinas; Sulphovinate, Sulphethylate, or Ethylsulphate of Sodium.—In efflorescent colourless crystals. Has been recommended as a tasteless aperient. *Dose*— $\frac{1}{2}$ to 1 ounce.

SOLVINE.—See page 201.

SOZOIODOL.

Di-iodo-paraphenolsulphonic Acid.
 $C_6H_4(HSO_4)I_2.OH$.—A combination of Iodine (54 per cent.), Carbolic Acid (20 per cent.), and Sulphur (7 per cent.). It has powerful antiseptic properties, and is recommended as an odourless substitute for Iodoform. It is used in syphilitic, tuberculous, and scrofulous ulcerations, etc. As Sozoiadol itself is not soluble, the following salts are recommended :—

Sodium-Sozoiadol. $C_6H_4(NaSO_4)I_2.OH$.—Colourless crystals, soluble about 1 in 12 of water or glycerine at ordinary temperatures. The glycerine solution remains unchanged when exposed to the light, but the aqueous solution gradually alters its colour on exposure.

Potassium-Sozoiadol.—Only slightly soluble in water or glycerine (about 1 in 50). Its effects are identical with those of the Sodium salt, but its insolubility makes it preferable as a dusting powder.

The alkaline salts are said to be non-poisonous and free from cauterising or irritating effects.

Sodium- and Potassium-Sozoiadol are specially recommended for affections of the respiratory organs, as ozaena and laryngitis, especially as an insufflation for the former.

Sodium-Sozoiadol has been given internally in doses of 1·5 grammes (23 grains) for swelling of the glands of the neck.

Lithium-Sozoiadol, in glancing white plates, is also manufactured.

Zinc-Sozoiadol is applied mixed with 1 part to 5 or 10 parts of Sugar of Milk. It is freely soluble in water. Injections of a solution (1 in 50) are recommended for diseases of the generative organs, as gonorrhœa.

Mercury-Sozoiadol.—An orange-red amorphous powder, insoluble in water. It should be applied in dilutions of only 1 in 10 or 1 in 20.

Sozoiadol Cotton and Gauze contain 5 and 10 per cent.

For reactions and tests of Sozoiadol, see *Ph. J.* June 21, '90.

SPARTEINÆ SULPHAS.

Sulphate of Sparteine.—The sulphate of an alkaloid obtained from the tops of the broom, *Oytisus scoparius* (Leguminosæ), a British plant. In colourless crystals, freely soluble in water.

Sparteine ($C_{15}H_{26}N_2$) is a colourless liquid alkaloid, heavier than, and insoluble in water. It is not used medicinally.

Sulphate of Sparteine acts as a cardiac tonic, reviving the heart-beats and pulse, equal to Digitalis or Convallaria, its effects being more lasting.

Dose— $\frac{1}{2}$ to 4 grains.

Hypodermic Tablets contain $\frac{1}{2}$ grain each.

SPERMINE.—See pages 233 and 304.

SPHAGNUM.

Bog-Moss, various species of *Sphagnum*, dried and pressed into sheets. It is capable of absorbing eight times its weight of water, and when applied to wounds, discharges, etc., has the useful property of absorbing the liquids. It

may be rendered antiseptic by treatment with corrosive sublimate.

STAPHISAGRIÆ SEMINA, B. P.

Stavesacre Seeds.—The seeds of *Delphinium Staphisagria* (Ranunculaceæ). They are a valuable parasiticide, and owe their property to a fixed oil.

Unguentum Staphisagriæ, B. P.—Seeds 1, Lard 2. Contains 10 per cent. of the oil. A useful preparation for pediculi.

Oleum Staphisagriæ.—Obtained by pressure from the seeds. May be used diluted with olive or almond oil and perfumed, for a similar purpose.

Delphina, Delphia, Delphine.—An amorphous yellowish alkaloid obtained from the seeds. Insoluble in water, soluble in dilute acids, alcohol, ether, and chloroform. Has been used in dropsy, asthma, neuralgia, etc. It is a heart poison. Locally it acts like Veratrine and may be used as an **Ointment**, 10 to 20 grains to 1 ounce. **Dose**— $\frac{1}{2}$ to $\frac{1}{2}$ grain.

Antidotes—Emetics; stimulants.

Several species of *Delphinium* grow in the Punjab, some of which are used by the natives as insecticides.

STILLINGIA, U. S. P.

Queen's Root.—The root of *Stillingia sylvatica* (Euphorbiaceæ). It contains an alkaloid, *Stillingine*, and is emetic and cathartic in large doses, alterative in small doses. It is used in torpidity of the liver and jaundice following intermittent fever, in ascites due to hepatic changes, in syphilitic affections, and in haemorrhoids.

Extractum Stillingiae Fluidum, U.S.P.—Miscible with water. **Dose**—15 to 60 minims

Liquor Stillingiae Compositus; Mc-Dade's Succus Alterans; Mistura Smilacis Composita.—Contains Stillingia in combination with *Smilax Sarsaparilla*, *Lappa minor* (Burdock), *Phytolacca decandra*, and *Xanthoxylum carolinianum*. This is said to possess wonderful anti-syphilitic powers, the formula being the result of an investigation into the nature of a remedy used by native doctors on the cotton plantations of Alabama. *Dose*—One teaspoonful 3 times a day, increased to a tablespoonful.

Stillingin.—The dried extractive. A brown powder, used similarly to the root. *Dose*—1 to 3 grains. Must be distinguished from the alkaloid.

Iodia, a proprietary remedy, is stated to contain Stillingia, Menispermum, etc., with 5 grains Iodide of Potassium and 2 grains Phosphate of Iron in each fluid drachm. *Dose*—1 to 2 drachms as an alterative.

STRAMONII FOLIA,

B. P. (Ad.)

Stramonium Leaves.—The dried leaves of *Datura Stramonium*. Their chief use is in asthma, for which they are smoked or burned and inhaled.

Pulvis Stramonii Compositus.—A powder containing Stramonium, Lobelia, Nitrate of Potassium, Anise, etc. A thimbleful burned on a plate, and the fumes inhaled, gives immediate relief in attacks of asthma. It is similar to 'Himrod's Cure' and other such preparations.

Stramonii Semina, B. P., are used for making the official preparations.

The leaves and seeds of *Datura alba*, Dhatura, are official in the *P. I.* as **Daturæ Folia et Semina**, and are used for the same purposes as Stramonium. The plant is frequently used by the natives for criminal purposes. A

Tincture, Extract, Plaster, and Poultice
are official.

Datura falsoa, another Indian species, and known as *Kāla-Dhatura*, possesses similar properties.

Daturina, Daturine.— $C_17H_{23}NO_3$.—An alkaloid obtained from *Stramonium*. It occurs in light-feathery crystals, and is identical with Atropine. (See pages 49, 155.) It is used for the same purposes as Atropine.

Daturinæ Sulphas.—In white crystals, soluble in water. *Dose*— $\frac{1}{50}$ to $\frac{1}{25}$ grain, increased to $\frac{1}{10}$ grain.

Guttæ Daturinæ.—2 grains to 1 ounce. For ophthalmic purposes.

STROPHANTHUS, B. P. (Ad.)

Strophanthus.—The mature ripe seeds of *Strophanthus hispidus*, var. *Kombé* (Apocynaceæ), freed from the awns. The plant grows in Africa, where it is widely distributed in the tropical and sub-tropical regions, and is very widely used by the natives of these parts as an arrow poison.

It contains two crystalline principles, *Strophanthin* (see page 275) and *Inein*, also *Kombic Acid*, oil, etc., but no alkaloid. There are at least two varieties of Strophanthus which appear to vary in their action, and it is not yet definitely known how many species of the plant yield the drug; the description given in the *B. P. (Ad.)* should therefore be adhered to in order to produce a uniform product.—*Ph. J.* Sept. 20, '90; *H. July '90*.

Strophanthus is a valuable cardiac tonic and diuretic. It exerts a more powerful action on the heart, and a less powerful action on the blood vessels, than Digitalis. It increases the cardiac systole, and in small doses slows the contractions. The action of the heart is accom-

panied by a rise in blood pressure, which appears to be directly produced by the drug. In disturbances of the circulation when the blood tension is unduly low, Strophanthus is capable of producing a diuretic effect. Strophanthus may be used with advantage in all weak states of the heart, whatever the cause of weakness.—*Fraser*.

It is harmless to children, and a valuable cardiac and diuretic remedy in diseases of childhood.—*Pr. Oct. '90; Ed. M. J. Dec. '90.*

2 minims of Tincture every 3 hours has been found useful in tetanus.—*L. '88, ii. 111.*

It is specially useful in the cardiac failure of prolonged typhoid fever.—*L. '87, ii. 201.*

Strophanthus has been recommended as a local anaesthetic, but does not appear to have proved satisfactory.

Tinctura Strophanthi, B. P. (Ad.)—1 in 20, the seeds being first treated with ether to remove oil. *Dose*—2 to 10 minims. Should not be prescribed in aqueous solution, as the bitter principle alters and becomes more toxic when kept in contact with water.—*Ph. J. Sept. 28, '89.*

Tabellæ Strophanthi.—2 minims of Tincture in each.

Strophanthin. $C_{31}H_{44}O_{12}$ *.—The active principle. A colourless or yellowish crystalline powder, freely soluble in water and alcohol. In weak acid solution it splits up into *Sophantheidin* and glucose. Its action is allied to that of Digitalin. Administered hypodermically it arrests the heart's action in systole. For the chemistry of Strophanthin, see *Ph. J. Oct. 26, '89.* *Dose*— $\frac{1}{20}$ to $\frac{1}{10}$ grain, hypodermically.

Hypodermic Tablets contain $\frac{1}{100}$ grain each.

Ouabain. $C_{30}H_{46}O_{12}$.—A crystalline glucoside obtained from the wood of Ouabaio, *Carissa schimperi* (Apocynaceæ). It is probably homolo-

*More recent analysis gives $C_{16}H_{26}O_5$ as the formula.

gons with Strophanthin, which it closely resembles in its action, being, however, more toxic. It has been found very efficacious in whooping-cough, cutting short the attack, reducing the violence of the cough, or hastening convalescence according to the stage of the disease. It is not cumulative.—*B. M. J.* Apr. 26, '90. *Dose*— $\frac{1}{2000}$ to $\frac{1}{10}$ grain given as a per mille solution.

During the same treatment it was noticed that the sugar in the urine was decreased; suggesting its application in diabetes.

Strophanthin and Ouabain produce corneal anaesthesia when applied to the eye, but are inferior to Cocaine.—*Ph. J.* Mar. 29, '90.

STRYCHNINA, B. P.

Strychnine; Strychnia. C₂₁H₂₂N₂O₂.—An alkaloid obtained from Nux Vomica, occurring in colourless crystals having an intensely bitter taste, very sparingly soluble in water, freely in chloroform. It is a very active poison, producing tetanic spasms. Its medicinal properties are antagonistic to Calabar bean, although it is not an antidote to poisoning by the latter. It is used as a nervine tonic, also in paralysis, lead-poisoning, epilepsy, and alcoholism.

Dose— $\frac{1}{50}$ to $\frac{1}{10}$ grain.

Antidotes.—Emetics, stomach-pump; Bromide of Potassium; Chloral Hydrate; Nitrite of Amyl; Chloroform anaesthesia; Curare, $\frac{1}{2}$ grain; artificial respiration.

The Bromide of Potassium should be given in $\frac{1}{2}$ ounce doses every 15 minutes; it may be combined with 30 grains of Chloral.—*Murrell*.

Tannin and Animal Charcoal are useless.—*Ph. J.* Sept. 22, '90.

10 drachms Easton's Syrup taken by mistake: the patient was cured in 3 hours by $\frac{1}{2}$ ounce Bromide of Potassium.—*L. Jan. 3, '91.*

Strychnine has been given hypodermically with success in opium-poisoning.—*Pr. Dec. '88; Ph. J. Dec. 29, '88.*

Hypodermic Tablets contain $\frac{1}{100}$, $\frac{1}{50}$, and $\frac{1}{20}$ grain each.

Hypodermic injections of Strychnine have been found very efficacious in snake-bite. Doses of 10 to 20 minims of Liquor Strychninæ must be injected every 15 minutes, amounting in all to 1 grain or more of the drug, until slight strychnine symptoms supervene. Strychnine is physiologically antagonistic to snake-poison. For convenience, it has been suggested to administer larger doses (40 to 80 minims) by the mouth. Further experience is needed regarding this remedy.—*M. R. Oct. '90.*

Liquor Strychninæ Hydrochloratis, B. P.—1 per cent. *Dose*—5 to 10 minims.

Ferri et Strychninæ Citras.—Contains 1 per cent. of Strychnine. (Greenish-golden scales, freely soluble in water. It is also sold in brown scales, resembling Citrate of Iron and Ammonia. *Dose*—3 to 8 grains.

Ferri Quininæ, et Strychninæ Citras.—See page 245.

Strychnine is also contained in Easton's Syrup, Compound Syrups of the Hypophosphites and Hydrobromates, some Phosphorus Pills, etc.

Strychninæ Acetas.—Colourless crystals, soluble 1 in 80 of water. *Dose*— $\frac{1}{2}$ to $\frac{1}{10}$ grain.

Strychninæ Arsenias.—Crystals, soluble 1 in 15 of cold water. *Dose*— $\frac{1}{10}$ to $\frac{1}{5}$ grain, 4 to 15 minims of a $\frac{1}{2}$ per cent. solution in liquid vaseline have been given successfully in phthisis, injected hypodermically.—*L. '89, i. 596.*

Strychninæ Hydrobromas.—Crystals, soluble 1 in 60 of water. *Dose*— $\frac{1}{10}$ to $\frac{1}{5}$ grain.

Strychninæ Nitras.—Crystals, soluble 1 in 70 of water. *Dose*— $\frac{1}{10}$ to $\frac{1}{5}$ grain. Hypodermically, a 2 per cent. solution is given in doses

of 1 to 4 minims for amaurosis, also for incontinence of urine.

Strychninæ Sulphas.—Large crystals, slightly soluble in water. *Dose*— $\frac{1}{2}$ to $\frac{1}{10}$ grain.

Strychninæ Sulphas Acida.—Soluble 1 in 36 of water. Best suited for hypodermic injection, a 1 in 40 solution being used in doses of 1 to 3 minims.—*M.* *Dose*— $\frac{1}{20}$ to $\frac{1}{10}$ grain.

Brucina; Brucine. $C_2H_{16}N_2O_4$.—Another alkaloid, contained along with Strychnine in the seed of *Strychnos Nux-vomica* (Loganiacœ), and other species, and alone in the bark of *S. ligustrina*. In crystals, very slightly soluble in water, freely soluble in alcohol, chloroform, and essential oils, insoluble in ether and fatty oils. It may be distinguished from Strychnine by its giving a red colour with nitric acid. Its action is similar to Strychnine, but much weaker. It has been used for epilepsy in the form of **Liquor Brucinæ**, 1 per cent. *Dose*—10 minims twice a day. *Dose of Brucine*— $\frac{1}{2}$ to $\frac{1}{3}$ grain.

Strychnos Nux-vomica is common in India, the seeds being exported in large quantities. *S. Colubrina* and *S. Ignatii* also contain Strychnine, the wood of the former, known as Lignum Colubrinum, or *Goagri-lakri*, being used as an anti-periodic, and, curiously enough, also as a remedy for snake-bite (see page 277), from which it derived its Portuguese name of *Pao de Cobra*.

SULPHONAL, B. P. (Ad.)

Sulphonal; Diethylsulphon-dimethyl-methane. $(CH_3)_2C(SO_2C_2H_5)_2$.—An oxidation product of ethyl-mercaptopan and acetone. It occurs in colourless, odourless, tasteless crystals; soluble in 15 parts of boiling water and in 500 parts of cold water, more soluble in alcohol and ether. When heated with cyanide of potassium the odour of mercaptan is evolved and a sulpho-cyanide formed, which gives a red colour with

perchloride of iron and excess of hydrochloric acid.

Sulphonal is a valuable hypnotic, its freedom from taste and also from all toxic properties being greatly in its favour. No cases have been met with in which a craving has been set up. It answers best in simple insomnia, in febrile sleeplessness with depressed circulation, in the sleeplessness of phthisis, Bright's disease, and intercostal neuralgia, and in delirium tremens, mania, and epilepsy. It is rather slower in producing its effects, but the sleep is as a rule more prolonged than under chloral. Its effects appear to be slightly cumulative.

Dose—15 to 60 grains, in fine powder, lozenges, or solution.

Sulphonal Lozenges.—8 grains and 16 grains each. These immediately disintegrate in the stomach, and are superior to compressed tablets.

The best method of administering Sulphonal is to dissolve a dose in *hot* water, in which case its action is almost immediate.

Sulphonal reduces the excitability of the reflex function of the spinal cord and diminishes peripheral sensation. Large doses slow the respiration, but do not affect the pulse. Urea is excreted in increased quantity after small doses, in diminished quantity after large doses; the volume of urine however is not affected. Although giddiness and a feeling of depression or confusion sometimes follow its administration, as a rule these effects do not follow, and the sleep is tranquil and refreshing. Its effects are marked even in healthy people, and in cases of insomnia it is most trustworthy.—*Journ. Chem. Soc.* May '90; *B. M. J.* '90, i. 710.

It has no action in sleeplessness caused by pain; it has a secondary effect on the second night after its administration; it does not constipate like opium; it is valuable in the morphine habit, but of little use in alcoholism; and it is contra-indicated where there is a tendency to vomiting or diarrhoea.—*N. I. Nov.* '89.

Notes on 5 cases of various natures, all more or less successful.—*M. R.* Oct. '90.

Has proved very valuable in insanity in Bengal, 20 to 60 grains every 2 hours causing rest for from 6 to 8 hours.—*Ibid.*

20 out of 22 cases of insanity were most successfully treated in Dublin.—*Dublin Journ. Med. Science*, Jan. '89.

8 cases out of 10 were cured of chorea after other remedies failed.

In doses of $7\frac{1}{2}$ grains it has been found to permanently check night-sweats, acting like Atropine and free from bad effects.—*L. Apr. 27, '89.*

It occasionally produces unpleasant symptoms after prolonged administration, these pass off on suspending the treatment.—*Ph. J. Nov. 30, '89; L. Nov. 23, '89.*

Three tablespoonfuls of the powder were taken by a workman in Germany, and caused 90 hours sound and continued sleep with no ill-effects save from want of food for that time.—*Ph. J. Apr. 27, '89.*

Only one case is on record in which death took place; over 1 ounce of the powder being taken. Stupor, insensibility, and anaesthesia supervened, with suppression of urine and copious perspiration, death occurring after 3 days.—*B. M. J. Oct. 25, '90; Ph. J. Nov. 8, '90.*

Sulphonal has been found to afford great relief in diabetes, lessening the sugar excreted, and relieving the symptoms generally.

Trional; Diethylsulphon-methyl-ethyl-methane. $(CH_3)(C_2H_5)C(SO_2C_2H_5)_2$.—Similar to Sulphonal, but with an ethyl group in place of one of the methyl groups, which is said to intensify the hypnotic action. It occurs in small crystalline scales, taste slightly bitter,

very slightly soluble in water. Its hypnotic action is half as great again as Sulphonal. *Dose*—10 to 30 grains.

Tetronal; Diethylsulphon-diethyl-methane. $(C_2H_5)_2C(SO_2C_2H_5)_2$.—Has both the methyl groups replaced by ethyl groups and is twice the strength of Sulphonal. Similar to Trional but less soluble in water. *Dose*—10 to 20 grains.

Trional and Tetronal have been experimented with and found equal, and in some cases superior, to Sulphonal.—*Ph. J.* Aug. 30, '90.

The Therapeutic Committee of the British Medical Association has reported as to the comparative utility of Sulphonal, Paraldehyde, and Chloralamide. Sulphonal produced sleep in $\frac{1}{2}$ to 2 hours as a rule, Paraldehyde in 5 to 15 minutes, Chloralamide in 15 to 20 minutes. Sulphonal and Paraldehyde caused drowsiness and the latter vomiting. Chloralamide had no bad effects.—*Ph. J.* Aug. 9, '90.

For detailed comparison of all the recent hypnotics, see *K. Jan.* '90.

SULPHUR, B. P.

This is met with commercially in the following forms:—

Sulphur Sublimatum, B. P., Sublimed Sulphur, Flowers of Sulphur.—Used for the following

Official Preparations—

Confectio Sulphuris	4 in 9.
Unguentum Sulphuris	1 to 4.

Sublimed Sulphur is required by the *B. P.* to be free from acid, which commercial Sulphur seldom is. When such is desired

Sulphur Lotum, Washed Sulphur, should be ordered.

Dose of Sulphur—20 to 60 grains.

Sulphur Precipitatum, B. P., Precipitated Sulphur.—This is free from grittiness and much more suitable for medicinal use. The old-fashioned Milk of Sulphur (*Lac Sulphuris*) contained sulphate of calcium, which this does not.

Trochisci Sulphuris, B. P. (Ad.).—Each Lozenge contains 5 grains Precipitated Sulphur, and 1 grain Acid Tartrate of Potassium, flavoured with Orange. The best form for the internal administration of Sulphur (see below). *Dose*—1 to 6 Lozenges. One or two may be taken at bed-time and continued for several weeks; if desired the dose may be repeated in the morning.

Small doses of Sulphur (not above 5 to 10 grains per day) are of great value in morbid conditions of the alimentary canal and liver, in haemorrhoids, habitual constipation, etc. It sometimes acts on the pulmonary mucous membranes, and is useful for affections of these organs, as well as in those of the skin and its appendages (such as boils, alopecia, etc.). It is also recommended for chronic forms of arthritis and gout, and also in muscular rheumatism.

—L. Apr. 6, '89.

Externally Sulphur is useful in scabies and other parasitic skin diseases.

Unguentum Sulphuris Compositum, Hebra's Itch Ointment, Wilkinson's Ointment.—Contains Sulphur, Chalk, Soft Soap, Huile de Cade, and Lard. Useful for parasitic skin diseases.

Sulphuris Chloridum, Chloride of Sulphur, S₂Cl₃.—A reddish yellow liquid, prepared by direct combination of Chlorine and Sulphur. It has a penetrating odour, fumes when exposed to the air, is decomposed by alcohol, water, or ether, but is soluble in benzol. It is used for scabies and acne in the form of

Unguentum Sulphuris Hypochloritis,
which contains Sulphur, Chloride of Sulphur,
and Simple Ointment.

Sulphaminol.—A new antiseptic. It is Thio-oxydiphenylamine, and occurs as a pale yellow, odourless and tasteless powder, insoluble in water, soluble in alcohol, glacial acetic acid, and alkalies. In contact with the animal secretions it is said to split up into its components, Sulphur and Phenol. It has been found to be non-toxic, and has been used with success in place of Iodoform.—*Ph. J.* May 3, '90; *H. July '90.*

Thiocamf.—A patented preparation, recommended as a disinfectant, the basis of which is the liquid formed by the action of Sulphur Dioxide on Camphor. Exposed to the air in a shallow tray it rapidly evolves sulphurous acid gas (SO_2), 6 ounces of liquid being said to evolve as much as 20,000 cubic centimetres of the gas. One ounce to a pint of water forms a disinfectant for drains, etc., while one ounce to a gallon is sufficiently strong for soaking clothes which have been worn by infected persons.—*Chem. News*, June 22, '89; *B. M. J.* July 20, '89; *Ph. J.* June 29, '89.

TABELLÆ.

Compressed Tablets.—Lenticular discs, each containing a definite amount of some drug, compressed into that form by machinery. They have some advantages over pills, being easier to swallow, and containing as a rule the pure drug without any excipient. Tablets of insoluble drugs, as Sulphonal, Phenacetin, etc., are usually mixed with some such powder as Tragacanth before compression, in order that they may disintegrate at once in the stomach. As this, however, does not appear to be always done, Tablets containing insoluble drugs should be tested by placing one in a glass of water for a few minutes

The following are those in most frequent demand :—

Ammonium Bromide	5 grains.
Ammonium Chloride (see p. 30) .. .	3 and 5 grains.
Ammonium Chloride with Borax .. .	5 grains.
{ Ammonium Chloride. 2½ grains.	
{ Borax	2½ grains.
Antifebrin	2 grains.
Antipyrin (see p. 38)	5 grains.
Borax	5 grains.
Cascara Sagrada Extract	2 grains.
Cascara, Compound—	
{ Cascara Extract	1 grain.
{ Euonymin	½ grain.
{ Nux Vomica Extract.	½ grain.
{ Hyoscyamus Extract	½ grain.
Cinchonidine Salicylate	2 grains.
Dover's Powder	5 grains.
{ Ipecacuanha	½ grain.
{ Opium	½ grain.
{ Sulphate of Potash. 4 grains.	
Manganese Dioxide	2 grains.
Nitroglycerine (Trinitrin) see p. 198.	
Pepain	1/10 and 1/5 grain.
Phenacetin	5 grains.
Potassium Bicarbonate	5 grains.
Potassium Bromide	5 grains.
Potassium Chlorate	5 grains.
Potassium Chlorate with Borax	5 grains.
{ Potassium Chlorate	2½ grains.
{ Borax	2½ grains.
Potassium Iodide	5 grains.
Potassium Nitrate	5 grains.
Potassium Permanganate	1 & 2 grains.
Quinine Sulphate	½, 1, 2, 3, and 5 grains.
Rhubarb	5 grains.
Saccharin (see page 255)	½ grain.
Salol	5 grains.
Sodium Bicarbonate	5 grains.

Soda-Mint or Neutralising Tablets—

{ Sodium Bicarbonate .. 4 grains.
 { Ammonium Carbonate .. $\frac{1}{4}$ grain.
 Oil of Peppermint .. $\frac{1}{4}$ minim.

Sodium Salicylate 3 & 5 grains.

Strophanthus Tincture 2 minims.

Sulphonal 6 grains.

Test Tablets (various), see page 316, *et seq.*

Trinitrin (see Nitroglycerine).

Trinitrin Compound (see page 198)—

{ Trinitrin .. $\frac{1}{100}$ grain.
 { Amyl Nitrite .. $\frac{1}{4}$ grain.
 Capsicum .. $\frac{1}{50}$ grain.
 Menthol .. $\frac{1}{50}$ grain.

Voice Tablets (see page 92).

{ Potassium Chlorate
 { Borax
 Cocaine

Zymine (see page 203) 3 grains.

Zymine Compound—

{ Zymine 2 grains.
 { Bismuth Subnitrate .. 3 grains.
 Ipecacuanha $\frac{1}{10}$ grain.

Tablet Triturates, containing small doses of the more powerful drugs, triturated with Sugar of Milk and compressed, are also sold.

Hypodermic Tablets.—See page 308.

TEREBENA PURA.

Pure Terebene.—An isomer of Oil of Turpentine, prepared by treating the latter with Sulphuric Acid and distilling until the distillate is optically inactive. It is a clear colourless liquid with an agreeable terebinthinate odour. Sp. gr. 0·864. It must be distinguished from the dark-coloured disinfectant sold as *Terebene*, which is a crude polymerised Oil of Turpentine.

The vapour of Terebene is a good sedative and antiseptic inhalation in phthisis and cough, and given internally in emulsion or on sugar it has been recommended for dysentery, also for dyspepsia and flatulence.

Dose—5 to 30 minims.

Vapor Terebenæ.—40 minims to 1 ounce with Light Carbonate of Magnesium. A tea-spoonful in a pint of water at 140° F. (see note page 101) as an inhalation.

Terpin-Hydrate, Terpene Hydrate, Hydrate of Oil of Turpentine. $C_{10}H_{16} \cdot 3H_2O$.—Also known as *Turpentine Camphor*. A derivative of Oil of Turpentine in colourless crystals, having the odour of Terebene, sparingly soluble in water, readily in alcohol and oils. It is sometimes deposited from oil of turpentine when the latter contains water. Useful in bronchitis and chest affections, loosening the expectoration. Has been given in neuralgia in doses of 3 to 4 grains 3 times a day between meals. *Dose*—2 to 6 grains.

Terpinol.—A colourless, oily, aromatic liquid obtained by the action of Sulphuric Acid on Terpin. Its uses are similar to those of Terpin. It is best given in gelatine capsules, the dose being diluted with Olive Oil. *Dose*—2 grains.

TEREBINTHINA CHIA.

Chian Turpentine.—An oleo-resin obtained by incision from the trunk of *Pistacia terebinthus* (Anacardiaceæ), of Chio. It is a soft solid, translucent, with a peculiar odour. It has been used as a remedy for cancer of the female organs, in which it is said to act upon the periphery of the growth, causing disappearance of the cancerous infiltration.

Dose—5 to 10 grains.

Mistura Terebinthinae Chiss.—Contains 30 grains in 1 ounce, emulsified with acacia and tragacanth. *Dose*—1 drachm three daily, gradually increasing to 3 drachms.

Pilula Terebinthinae Chiss.—3 grains in each pill with 2 grains Sublimed Sulphur. *Dose*—2 every four hours.

THUJA.

The leaves of *Thuja occidentalis* (Coniferae) an American tree. It has been used as a decoction for intermittent fever, cough, rheumatism, etc., and has recently been brought forward as an *internal* remedy for warts and similar growths. Several remarkable cures have been reported, but its effects have not been very widely confirmed as yet.

It is given in the form of a **Tincture** in doses of 10 to 60 drops, 3 or 4 times daily. The same Tincture may also be applied externally as a compress at the same time.

THALLINÆ SULPHAS.

Sulphate of Thalline; Thalline; Tetrahydroparamethoxychinoline. C₉H₁₀N.
(OCH₃).—The sulphate of a synthetically prepared base from Chinoline. A white crystalline solid, soluble in water, less so in alcohol. A dilute solution gives a green colour with ferric chloride.* The crystals have an aromatic bitter taste, and darken by exposure to the light.

Has been used as an antipyretic, but has now fallen into disuse. It is recommended in small doses for typhoid fever. As an antiseptic it has been found useful in gonorrhœa, injections of 4 to 8 grains to 1 ounce of water being used, as well as **Bougies**, 2½ and 5 per cent. with gelatino.

Dose—3 to 8 grains.

Antrophores.—Spiral spring bougies, coated with gelatine, and containing 2½ and 5 per cent. of Thalline. Also with Cocaine, Iodoform, Zinc Sulphate and Tannin, Nitrate of Silver, Subnitrate of Bismuth. They are used for gonorrhœa.—*B. M. J.* Oct. 20, '88.

* Thalline takes its name from the colour of this reaction—θαλλός, a green twig.

Thalline Tartrate is also used. **Dose**—3 to 8 grains.

THEOBROMINA.

Theobromine. C₇H₈N₂O₂.—An alkaloid obtained from *Theobroma Cacao* (Sterculiaceæ). It is allied to Caffeine (page 62), differing from it by CH₂, and is known chemically as di-methyl xanthine. A white crystalline powder, sparingly soluble in water, alcohol, or ether.

Like Caffeine, it has a direct action on the kidneys, without, however, any irritating influence on the nerve centres. It is unsuitable for administration owing to its insolubility, and for this reason the following salt, allied to Caffeine Sodio-Salicylate (see page 63), is recommended.

Diuretin. Theobromine Sodio-Salicylate,—A white powder, freely soluble in water. It contains 50 per cent. of Theobromine. The Salicylate of Sodium is said to have no connection with its action on the kidneys, beyond increasing its absorbability. In cases where the usual remedies had failed, Diuretin has been found to give very satisfactory results, except where there was extensive degeneration of the kidneys.—*Ph. J.* Dec. 28, '89; *K.* July '90.

Dose—90 grains daily, in 15-grain doses. Being very liable to decomposition by acids, and consequently likely to have its action interfered with by the gastric juice, its administration in cauchets, or as a clyster dissolved in lime water, has been suggested.—*L.* Jan. 3, '91.

Diuretin has more recently been shown to be a mixture of Sodium-theobromine (prepared by dissolving the alkaloid in caustic soda and crystallising) and Salicylate of Sodium. It does not keep well in solution.—*M. R.* Oct. '90.

Exposure to the carbonic acid of the atmosphere is sufficient to render it partially insoluble through the formation of sodium carbonate.—*Ph. J.* Nov. 29, '90.

THERMIFUGIN

$C_9H_{11}(CH_3)_2N.COONa$.—The Sodium salt of a synthetic acid, methyl-trihydro-oxyquino-line carboxylic acid. A faint yellowish-white salt, forming a brown solution with water. It has been recommended as an antipyretic, being said to combine the three effects of reducing temperature, retarding the pulse, and increasing the blood pressure.

It has not come into general use.

THIOL. See page 11

THYMOL, B.P.

Thymol; Thymylie Alcohol. $C_9H_{11}HO$.—A steuropene obtained from the oil of thyme, *Thymus vulgaris* (Labiatae), horsemint, *Monarda punctata*, or bishop's weed, *Ptychosperma Ajowan* (page 25), by saponification with soda, and treatment with hydrochloric acid, or by exposing the oil to a low temperature. It is chiefly prepared from *Ptychosperma* also known as *Carum copticum*, and is similar to the *Ajwain-ka-phul* sold in the Indian bazaars, which is prepared in Central India by exposing the oil to spontaneous evaporation at a low temperature.

Thymol is homologous with Phenol (C_6H_5OH), and occurs in large colourless crystals, with a strong odour of thyme, and an aromatic taste, very sparingly soluble in water, freely in alcohol, ether, chloroform, olive oil, glacial acetic acid, and alkalies. It forms liquid combinations with chloral, camphor, carbolic acid, etc. Thymol has been prepared synthetically from cuminol.

It acts as a powerful antiseptic, its chief use being for surgical dressings. It is also useful as a lotion in ozaena and as an ointment in eczema.

or ringworm. Internally it has been recommended for diabetes, typhoid, also in large doses (45 to 60 grains *per diem*) for tuberculosis.

Dose— $\frac{1}{2}$ to 2 grains.

Thymolite.—See page 174.

Liquor Thymol.—1 in 800. As an antiseptic lotion or spray, useful for burns, removing the smell of tobacco from the mouth, etc. **Volkmann's Solution** contains 1 in 1000, with alcohol and glycerine.

Thymol Gauze and Wool.—3 per cent.

Pastillus Thymol.— $\frac{1}{2}$ grain each. See page 129.

Thymol Soap.—Toilet soaps containing Thymol are prepared.

Spiritus Thymol.—1 in 10. *Dose*—3 to 15 minims.

Unguentum Thymol.—10 grains to 1 ounce; stronger or weaker if desired. The Thymol must be completely dissolved, and the ointment free from grittiness, otherwise it will produce irritation. It keeps off mosquitoes, etc., and is useful in eczema and ringworm.

Vapor Thymol.—6 grains to 1 ounce with Light Carbonate of Magnesium. A teaspoonful in a pint of water at 140° F. (see note, page 101) for inhalation. For pharyngitis and laryngitis.

Listerine.—A proprietary antiseptic composed of Oil of Thyme, with Eucalyptus, Baptisia, Wintergreen, and Mint Oils, Boric and Benzoic Acids, and Alcohol. Used as an internal and external antiseptic. *Dose*—One drachm.

TONGA.

A fluid extract prepared from the bark and root of *Premna Taitensis* (Verbenaceæ), and

Raphidophora citensis (Araceæ), of the Fiji Islands. A dark brown liquid, miscible with water. Said to be very valuable in neuralgia, especially that of the cranial nerves.

Dose— $\frac{1}{2}$ to 2 drachms, 3 times a day.

'Tonga' is the subject of a patent in England, but is manufactured in America from the plants above mentioned.

TRIBROMPHENOL. } See TRICHLORPHENOL } p. 9.

TRIFOLIUM.

Clover.—The flowers of *Trifolium pratense* (Leguminosæ), or purple clover. It has long been employed as a remedy for whooping cough, and has more recently been used externally as a wash for ill-conditioned ulcers, and internally as an alterative in scrofula, syphilis, etc.

Extractum Trifolii Liquidum.—Miscible with water. *Dose*— $\frac{1}{2}$ to 2 drachms.

Syrupus Trifolii.—*Dose*—A teaspoonful 3 or 4 times daily for whooping cough.

Syrupus Trifolii Compositus.—An American preparation containing in each ounce:—Trifolium, 32 grains; Stillingia, Lappa, Phytolæca, Berberis Aquifolium, and Cascara Amarga, of each 16 grains; Xanthoxylum, 4 grains; Iodide of Potassium, 8 grains. Used as an alterative similarly to Sarsaparilla. McDade's Liquid, etc. *Dose*—1 to 2 drachms thrice daily.

TRIMETHYLAMINA.

Trimethylamine; Secalin. $(CH_3)_3N$.—A compound ammonia obtained from herring-

brine, formerly prepared by the action of caustic alkali on ergot, hence its name Secalin. It is isomeric with Propylamine ($C_3H_7 \cdot NH_2$), for which it has often been mistaken, the medicinal preparation sometimes incorrectly going under the latter name. A solution containing 10 to 20 per cent. is used medicinally. It is a colourless, alkaline liquid, with a strong odour of herring-brine, miscible with water. It has been found useful in acute rheumatism, taken internally and used externally as a liniment 1 to 3 of glycerine.

Dose—4 to 8 minimæ, or up to 1 drachm, every 2 or 4 hours; the disagreeable odour may be disguised by means of aromatics.

Trimethylaminæ Hydrochloras.—

Prepared from the solution by neutralising with hydrochloric acid and crystallising. A crystalline salt, deliquescent and soluble in water. It has a slight odour of the base, and a pungent, saline taste. *Dose*—2 to 3 grains, 3 to 5 times a day, in solution or coated pills.

TRINITRIN.—See page 197.

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TRIONAL.—See page 280.

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TRITICUM, U. S. P.

Couch-grass.—The rhizome of *Triticum repens* (Graminaceæ). It acts as a mild diuretic, but is chiefly used for its emollient properties in affections of the bladder.

Decoctum Tritici.—1 in 20. *Dose*—2 to 8 ounces.

Extractum Tritici Flui-
dum, U. S. P.

Extractum Tritici Liqui-
dum, B. P. C.

Dose—1 to
6 drachms.

TURPETHUM.

Turpeth; Turbith. The root and stem of *Ipomoea Turpethum* (Convolvulaceæ), common in India. Has long been used by natives as a cathartic under the name of *Nisot*, but has not found favour among European practitioners owing to the uncertainty of its action.

Dose—30 to 60 grains.

Extractum Turpethi. *Dose* 10 to 20 grains.

Turpeth contains 4 per cent. of a brownish-yellow drastic resin, 94 per cent. of which consists of *Turpethin*. This may be converted by the action of alkalies into *Turpethic Acid*, and by mineral acids into glucose and *Turpetholic Acid*. The root contains also a volatile oil and a yellow colouring matter.—*Hatts.*

ULEXINA

Ulexine. $C_{11}H_{14}N_2O$.—An alkaloid obtained from the seeds of furze, *Ulex europaeus* (Leguminosæ), a common English shrub. In yellowish-white crystals, deliquescent, soluble in water and chloroform, insoluble in ether.—*Ph. J.* Aug. 7, & Sept. 18, '86.

Ulexine is a nerve and muscle poison, a respiratory poison, raising arterial tension and producing diuresis; the respiratory action being produced by the smallest doses, seems to be most important.—*Journ. Physiology*, vol. iii., No. 2.

It is an antidote to Strychnine, and a powerful diuretic.—*Ph. J.* June 22, '89; *L. Feb. 4, '88.*

Must be employed with caution in stricture, $\frac{1}{2}$ grain having caused temporary suppression of urine, vomiting, and fever.—*L. Sept. 24, '87.*

Dose— $\frac{1}{2}$ to $\frac{1}{3}$ grain.

Ulexinæ Hydrobromas.—Freely soluble in water. *Dose*—The same.

The **Nitrate** and **Hydrochlorate** are also prepared.

Chemical and physical characters of Ulexine, see *Ph. J.* June 22, '89.

Cytisine, an alkaloid obtained from laburnum, *Cytisus Laburnum*, has properties very similar to Ulexine, and is closely related to it chemically.—*Ph. J.* May 31 & June 14, '90.

The furze (also known as gorse or whin) has long been used in Scotland as a domestic remedy on account of its diuretic properties.

URANII NITRAS.

Nitrate of Uranium.—The nitrate of a metal occurring in pitchblende and other minerals. In yellow crystals, freely soluble in water, having an astringent taste. It is used in diabetes, also as a throat spray, 10 grains to 1 ounce.

Dose— $\frac{1}{2}$ to 5 grains.

It is an irritant poison, liable to produce gastro-intestinal inflammation, emaciation, and sugar in the urine.—*T. G. Oct. '88.*

URETHANE.

Ethyl Carbamate. $\text{CO.NH}_2.\text{OC}_2\text{H}_5.$ —

It occurs in white crystals, freely soluble in water, without much taste or odour. It acts as a hypnotic, producing normal sleep without affecting

the heart. It is especially useful in children, in cases of acute mania, tremens, and as an antidote to Pierotoxin, and Resorcin. It does not have come into very general use.

Dose—15 to 60 grains.

See also *K. Jan.* '90.

Uralium. Ural, Chloral-Urethane.—A compound of Urethane and Chloral, but differing from both its constituents by being sparingly soluble in water. It is soluble 1 in 6 of spirit. Recommended as a hypnotic, being said to be rapid and safe. **Dose**—10 to 40 grains. —*Ph. J.* Mar. 29, '90; *C. & D.* Mar. 23, '89.

It is uncertain in its effects, often disorders digestion, sometimes causing nausea and vomiting. —*L. Jan.* 3, '91.

Somnal. Ethylirtes Chlorodurethane.—Stated to be a compound of Urethane, Chloral, and Alcohol, differing chemically from Chloral-urethane. It is said to produce sleep in half an hour, lasting 6 to 8 hours. The alcoholic solution is used. **Dose**—15 to 30 minimis. It is believed to be merely a solution in alcohol of Chloral Hydrate and Urethane. —*Ph. J.* Nov. 2, '89; *K. Jan.* '90; *Ph. Rec.* Jan. 6, '90.

Euphorine. Phenyl Urethane, Ethyl Phenylcarbamate. $\text{CO}(\text{NH}_2\text{C}_6\text{H}_5)\text{OC}_2\text{H}_5$.—A compound related to Acetanilid, in white crystals, having a slightly acrid taste, sparingly soluble in water, freely in alcohol. Recommended as a safe and rapid antipyretic, also as an analgesic, antirheumatic, and antiseptic. —*Ph. J.* Nov. 8, '90; *K. July* '90. **Dose**—5 to 10 grains; up to 30 grains daily may be given. Must be distinguished from *Europhen*, page 47.

USTILAGO, U. S. P.

Corn Smut, Corn Ergot.—The fungus, *Ustilago Maidis*, grown upon maize, *Zea Mays*.

(Gramineæ). Its therapeutical effects are similar to Ergot, and by some believed to be more uniform; it is superior to the latter drug in haemorrhages. Given as **Liquid Extract**. Dose—15 to 60 minims.

VANILLIN.

Vanillie Acid. The crystalline odorous principle of Vanilla, *Vanilla planifolia* (Orchidaceæ), obtained by exhausting with alcohol. It is also obtained artificially from coniferin. Soluble in alcohol, ether, and volatile oils, insoluble in water.

Its use has been suggested as an excito-motor stimulant in atonic dyspepsia. It is also used as a test for mineral acids, a solution 1 in 30 of alcohol with 2 parts phloroglucin, giving a red colour with such acids, but not with organic acids.

VASELINUM.—See page 207.

VERATRINA, B. P.

Veratrine, Veratria.—An alkaloid or mixture of alkaloids, obtained from Cevadilla, the seeds of *Schœnocalyx officinale* (Melanthaceæ), from Mexico. In grey amorphous masses, very irritating to the nostrils, bitter, acrid, and poisonous. It is supposed to consist of Ceradine, O-radilline, Veratrine, Sabadine, Sabadinine, and some other alkaloids.

It is an emetic and cathartic, but is seldom given internally, its chief use being as an appli-

cation for neuralgic pains. It should not be used where the skin is broken.

Dose— $\frac{1}{10}$ to $\frac{1}{5}$ grain.

Antidotes.—Emetics; stimulants, coffee; warmth; recumbent position.

Unguentum Veratrinæ. B. P.—7 grains in 1 ounce. Used like Aconitine Ointment for neuralgia.

Oleatum Veratrinæ.—See page 199.

Veratrine is contained in **Anodyne Amyl Colloid**, page 20.

VIBURNUM, U. S. P.

Black Haw.—The bark of *Viburnum prunifolium* (Caprifoliaceæ). The root bark is also used and is held by some to be more efficacious. It acts as a uterine tonic and sedative, and has been found to prevent abortion. Also valuable in dysmenorrhœa and after-pains.

Extractum Viburni Fluidum, U. S. P.—Not miscible with water. *Dose*—15 to 16 minims.

The leaves of *V. fatidum*, a native of Burma, and cultivated in Western India, are used by the natives as a remedy for similar complaints. The plant is known as *Narrel*. The leaf-juice is taken in doses of 2 ounces daily for menorrhagia and in post-partum haemorrhage. It is also an old custom among Hindu women who have been confined to hang a branch of the same plant over their door. *Pg. Ind.*

WRIGHTIA. —See page 140.

XYLOL.

Xylene. C₈H₁₀.—A derivative of coal-tar, chemically dimethylbenzene or C₆H₅(CH₃)₂. A

colourless or yellowish liquid, with a faint odour.
Sp. gr. 0·86.

It has found application in small-pox, being successfully employed in a large number of cases. It relieves the angina and eruption in the throat, and lessens the fetid exhalation.

Dose—10 to 15 minims. May be given in **Capsules**, containing 5 or 10 minims dissolved in oil.

It is also used as a spray or lotion externally.

YERBA SANTA.

Holy Herb ; Bear's Weed.—The leaves of *Eriodictyon glutinosum* and *E. californicum* (Hydrophyllaceæ), from California and Mexico. It is a stimulant to the mucous membrane of the bronchial tubes, and used for bronchitis, asthma, and allied complaints. It has also the property of destroying the bitterness of Quinine, one drachm of the syrup being sufficient for 5 grains of Quinine. In prescribing such a combination no acid should be ordered, acids and acid salts of quinine being incompatible with preparations of the drug.

Extractum Eriodictyi Liquidum,
Liquid Extract of Yerba Santa.—Not miscible with water unless rendered alkaline. *Dose*—15 to 60 minims.

Syrupus Eriodictyi Aromaticus.—16 grains in 1 ounce with aromatics. One drachm masks the bitterness of 5 grains Quinine.

ZINCUM, B. P.

Zinc. Zn.—The Zinc salts are astringent and irritant, but on account of their different degrees of solubility, their varying affinity for water, and perhaps for the tissues, the several members of this group manifest these properties in unequal degrees. Their chief employment is for external application.—*Ring.*

Antidotes.—Carbonate of Sodium or Potassium in large quantities, dissolved in warm water : milk and eggs ; Tannin, tea, Laudanum ; Linseed poultices to the abdomen. An enema of gruel, or mucilage of starch, may be given if there be much pain in the abdomen.—*Murrell.*

Incompatibles.—Astringents ; alkalies and alkaline carbonates, Lime water : Milk.

The following preparations are in use :—

Zinci Acetas, B. P. $Zn(C_2H_3O_2)_2 \cdot 2H_2O$.—Thin, colourless, crystalline plates, freely soluble in water. It is used similarly to the Sulphate. *Dose*—1 to 2 grains as a tonic ; 10 to 20 grains as an emetic. 2 grains to 1 ounce forms an eye-lotion or injection.

Zinci Bromidum, U. S. P. $Zn Br_2$.—A white, or nearly white, granular powder, very deliquescent and soluble in water. Has been successfully used in epilepsy. *Dose*—2 to 10 grains, 3 times daily.

Zinci Carbonas, B. P. $Zn CO_3 \cdot (Zn_2H_2O)_2 \cdot H_2O$.—A white, impalpable powder, insoluble in water. Used like Oxide of Zinc. *Dose*—2 to 10 grains.

Calamina Præparata, B. P., Lapis Calaminaris Præparatus.—Native carbonate of zinc calcined and reduced to impalpable powder. A pinkish brown powder, consisting of impure oxide of zinc. It should be almost entirely soluble in acids, with effervescence, otherwise it contains sulphate of barium. It is used as a dusting powder, and in face lotions, 40 grains in 1 ounce of Rose Water, with 20 grains Oxide of Zinc and 20 minims Glycerine, forming a useful Lotion for eczema and acne. $\frac{1}{2}$ grain Corrosive Sublimate may be added.—*M.*

Unguentum Calaminæ, B. P.—1 in 6.

Zinci Chloridum, B.P. $Zn Cl_2$.—Usually in white sticks, very deliquescent and caustic,

freely soluble in water. It is a powerful astringent, antiseptic, and disinfectant, a lotion of 20 grains to 1 ounce being equal in efficacy to carbolic acid as an antiseptic lotion for surgical purposes. See also page 302.

Liquor Zinci Chloridi, B. P.—3 grains in 4 minims. Sp. gr. 1·460. Sir William Burnett's Disinfecting Fluid is a similar solution, but less pure. Sp. gr. 2·000. It usually precipitates basic oxychloride on dilution with water; this may be redissolved by adding hydrochloric acid. A powerful disinfectant: it is, however, very poisonous and must be cautiously used.

Pasta Zinci Chloridi.—See page 212.

Zinci Citras.—An amorphous white powder, imperfectly soluble in water. Has been used for epilepsy. *Dose*—3 to 12 grains.

Zinci Cyanidum.—An insoluble white powder. It relieves palpitation and pain in the region of the heart, resembling Digitalis in its action. *Dose*— $\frac{1}{10}$ to 1 grain.

Mercuro-Zinc Cyanide.—See page 143.

Zinci et Potassii Cyanidum.—A soluble salt, recommended for use in place of Hydrocyanic Acid. *Dose*— $\frac{1}{10}$ to 1 grain.

Zinci Lactas—In white crystalline pieces, soluble in water. This salt has been recommended as preferable in epilepsy as it deranges the stomach less than other salts of Zinc. *Dose*—3 to 30 grains.

Zinci Nitrás.—Has properties similar to the Chloride, in place of which it has been used, it being said to cause less pain and to penetrate deeper.

Zinc Oleate.—See page 201.

Zinci Oxidum, B. P. ZnO.—A white powder, insoluble in water. Internally it is given as a tonic, externally it is used as a dusting powder, or astringent application. *Dose*—2 to 10 grains.

Gelatum Zinc*i*.—See page 129.

Unguentum Zinc*i*, B. P.—80 grains to 1 ounce.

Cremor Zinc*i*.—The same, made with Vaseline and perfumed.

Unguentum Zinc*i* Compositum.—Equal parts of Zinc Ointment and Ointment of Glycerine of Subacetate of Lead.

Salve Mulls contain $\frac{1}{2}$ and 1 grain to the square inch, also with Ichthyol, and Red Oxide of Mercury.

Zinc*i* Permanganas. Reddish-purple crystals, soluble in water. Used like Permanganate of Potassium (page 240) for lotions, etc., where the astringent action of the Zinc salt is desired.

Zinc*i* Phosphidum, U. S. P. $Zn P_2$.—A greyish black powder, or small fragments, insoluble in water, soluble in acids. Contains about 24 per cent. of Phosphorus, and has been recommended as a substitute for that drug. *Dose*— $\frac{1}{20}$ to $\frac{1}{4}$ grain.

Zinc Sozoiadol.—See page 271.

Zinc*i* Sulphas, B. P. $ZnSO_4 \cdot 7H_2O$.—Colourless crystals, soluble in water. Used internally as a tonic and astringent, in epilepsy, chorea, etc., also as an emetic. Externally as an eye-lotion and injection, 1 to 3 grains to 1 ounce. *Dose*—1 to 3 grains as a tonic or astringent; 10 to 30 grains as an emetic.

Lotio Rubra.—Contains 2 grains Sulphate of Zinc, with 15 minimis Compound Tincture of Lavender to 1 ounce.

Zinc*i* Sulphis. Sulphite of Zinc. $ZnSO_4 \cdot 2H_2O$.—A white crystalline salt, stable and insoluble in water. A non-poisonous and non-irritating antiseptic. It acts by slowly liberating sulphurous acid, and is used in the form of

Zinc Sulphite Gauze.—Prepared by treating sterilised gauze with solutions of Sulphate of Zinc and Sulphite of Sodium, the Zinc Sulphite being deposited in and around the fibres of the gauze, which is tinged with an organic dye. It may be tested by placing in dilute sulphuric acid when sulphurous acid is liberated and the colour of the gauze bleached. May be dipped in weak carbolic acid before use, but this is not necessary.—*B. M. J.* Nov. 8, '90; *Ph. J.* Nov. 29, '90.

Zinci Sulphocarbolas, B. P. $Zn(C_6H_5SO_4)_2 \cdot H_2O$.—Colourless crystals, very soluble in water. Used as an injection of 2 or 3 grains to 1 ounce of water, for gonorrhœa and leucorrhœa.

Zinci Sulpho-ichthyolas.—See page 158.

Zinci Valerianas, B. P.—White crystals, having an odour of Valerian, slightly soluble in water. Used as an antispasmodic in chorea, epilepsy, hysteria, etc. *Dose*—1 to 6 grains in pill.

Chloride of Zinc Injections in Tuberculosis.—Quite recently it has been discovered that Chloride of Zinc, injected into tubercular tissue causes fibrous induration of the part, preventing spread of the disease. A 5 to 10 per cent. solution is employed, being injected in doses of 2 or 3 drops in a number of places round the periphery of the diseased part.—*B. M. J.* July 11, '91; *L.* July 18, '91; *Ph. J.* xxii, 82.

SUPPLEMENTARY LIST

OF

More Recently Introduced Drugs

Not included in the foregoing pages.

Arecoline Hydrobromate.—A salt of one of the Areca alkaloids (see page 46). Occurs in minute silky needles, soluble in water. Its action resembles partly that of Muscarine and partly that of Pelletierine. It is a local irritant when applied to mucous membranes, and applied to the eye contracts the pupil. It also produces vomiting and diarrhoea in medium doses, while small doses slow the action of the heart which stops in diastole. It also affects respiration, causing dyspnoea, and has a paralysing action on the brain. This action possibly explains betel-chewing. *Dose.* Not fixed: $\frac{1}{4}$ to $\frac{1}{2}$ grain (subcutaneously) proved fatal to cats.—*B. M. J. (Supplement)*, Oct. 11, '90.

Benzosol.—Similar to Guaiacol (see page 101), but having the hydroxyl hydrogen replaced by the benzoyl group. Formula $(O.CO.C_6H_5)_2C_6H_3(O.CH_3)$. It is prepared from Guaiacol, and is a tasteless white powder, with a faint bitter-almond odour, almost insoluble in water, soluble in ether and chloroform. It is recommended as an antipyretic and antiseptic.

Caffeine Phthalate.—A white powder with a slightly bitter taste. It is soluble in water, and may be used as the other soluble salts of Caffeine (see page 62).

Guaiacol Carboxylic Acid.—A white powder, slightly soluble in water, having an odour resembling creasote, and a bitter and astringent taste. It is a compound of Guaiacol-

Sodium and Carbon Dioxide (CO_2), and is put forward as a powerful antiseptic and antipyretic. Its action is similar to Guaiacol, and it is supposed to split up in the system, thus avoiding the nauseous taste of Guaiacol (page 101).

Iodic Hydrarg.—The name given to a special preparation consisting of a mixture of Mercuric Chloride and Potassium Iodide. It is said to possess double the bactericidal power of corrosive sublimate. It is soluble in water, 1 grain in 3 ounces being a suitable strength for injections, and 1 in 7,000 for eye-lotions. It is less poisonous than corrosive sublimate.

Lysol.—A dark brown syrupy liquid, with a faint phenolic odour. It is freely miscible with water and alcohol, and has been introduced as a soluble antiseptic and disinfectant.

Spermine Hydrochlorate.—Spermine or Piperazidine (see page 233) has been introduced as a synthetic representative of the base obtained from spermatie fluid, in which it exists in combination with phosphoric acid. It has made a sensation on account of Dr. Brown-Séquard's statement, that preparations of the spermatie fluid when injected have a peculiar power of stimulating the vital energy. Spermine Hydrochlorate is supplied in 2 per cent. sterilised solution, contained in small sealed glass flasks holding 1 gramme.

Ferri et Magnesii Sulphas. the double Sulphate of Iron and Magnesium. Small granular crystals of a pale green colour. Given in 10 grain doses 3 times a day it is a useful form for anaemia and chlorosis, producing neither aperient nor constipating effects. It is superior to a mixture containing the two sulphates, which is frequently prescribed.—*M. R.* Aug. '91.

APPENDIX.

REVIEW OF THE ADDITIONS

TO

THE BRITISH PHARMACOPÆIA, 1885,
PUBLISHED NOVEMBER 29, 1890.

This publication, which is referred to throughout this work as 'B. P. (Ad.),' contains 41 articles, and was compiled by the General Medical Council, assisted by a committee of nine pharmacists.

The work has on the whole been well put together, especially if the difficulty of selecting, from the vast number of new remedies, such as are likely to occupy a permanent place, be considered.

Galenical Preparations. — Exception has been taken to *Mistura Olei LEMONI*, which makes an unsatisfactory preparation unless the process be modified, and which contains in a 2-ounce dose 10 minimis Oil of Lemon and 1 drachm Liquor Potassie, rather excessive proportions. A noteworthy addition is *Extractum Euonymi Siccum*, 'commonly known as *Euonymin*,' which contains 80 per cent. of dry extractive incorporated with sugar of milk. It is unfortunate that characters and tests have not been given in order that a good Euonymin may be recognised, as several varieties exist (see page 115). The addition of *Liquor Morphinæ Sulphatis* is unnecessary from a therapeutic point of view, unless a stable solution is desired containing no acid. *Syrupus Ferri Subchloridi*, should have been also termed *Protochloridi*, that being the name under which it was introduced and has been generally used. The other galenical preparations call for no special comment.

Chemicals.—The first thing that strikes an observer is the new names adopted for the various synthetic remedies. *Gluside* for Saccharin is an advantageous change, owing to the chances of mistaking the latter name for Saccharum. *Phenazon* for Antipyrin, although not likely to supersede the latter name in prescribing, is a decided improvement, giving an idea of its composition — phenyl-dimethyl-pyrazolone. *Trinitrin* has been adopted for Nitroglycerine, and a *Liquor Trinitrini* made official as well as the Tablets, yet strange to say, Nitroglycerine itself has never been introduced into the Pharmacopœia. Antifebrin under the name of *Acetanilide*, *Homatropine Hydrobromate*, *Phenacetin*, *Paraldehyde*, *Picrotoxin* and *Sulphonol* have also found a place. For the first time, constitutional formulæ have been adopted for the chemicals. This is desirable in the case of such articles as Sulphonol, its empirical formula of $C_7H_{16}S_2O_4$ being quite meaningless, while $(CH_3)_2C(SO_3C_2H_5)_2$ at once shows its composition. No formula at all is given for Picrotoxin, and only the empirical one of $C_{10}H_{15}NO_2$ for Phenacetin.

Drugs.—The additions of this nature are all drugs that have been in use for some time and are well established remedies, as *Euonymus*, *Hamamelis*, *Hydrastis*, *Huile de Cade*, *Laudanum* under the name of *Adeps Lanar Hydrosus*, *Stramonium*, *Strophantus*. In the case of the last named drug, the description given should ensure a more uniform article being put in the market in future.

The following is an alphabetical list of the Additions, all of which are described in the body of the work.

Addition	page
<i>Acetanilidum</i>	37
<i>Acetum Ipecacuanhae</i>	.. 168
<i>Adeps Lanar</i>	.. 178
<i>Adeps Lanar Hydrosus</i>	.. 177
<i>Emplastrum Menthol</i>	.. 183
<i>Eucalypti Gummi</i>	.. 113
<i>Euonymi Cortex</i>	.. .. 115
<i>Extractum Euonymi Siccum</i>	.. 115
<i>Extractum Hamamelidis Liquidum</i>	.. 140
<i>Extractum Hydrastis Liquidum</i>	.. 150
<i>Gelatinum</i>	.. 128
<i>Glusidum</i>	.. .. 254
<i>Hamamelidis Cortex</i>	.. .. 139
<i>Hamamelidis Folia</i>	.. .. 140
<i>Homatropine Hydrobromas</i>	.. .. 51
<i>Hydrastis Rhizoma</i>	.. .. 149
<i>Liquor Cocainæ Hydrochloratis</i>	.. .. 92
<i>Liquor Morphinæ Sulphatis</i>	.. .. 191

Liquor Trinitrini	page	198
Magnesii Sulphas Effervescent	"	269
Mistura Olei Ricini	"	133
Oleum Cadinum	"	236
Paraldehydum	"	209
Phenacetinum	"	215
Phenazonum	"	38, 218
Picrotoxinum	"	229
Pilula Ferri	"	121
Pulvis Soda Tartaratic Effervescent	"	269
Sodii Benzoas	"	264
Sodii Nitris	"	266
Sodii Phosphas Effervescent	"	267
Sodii Sulphas Effervescent	"	269
Stramonii Folia	"	273
Strophanthus	"	274
Sulphonial	"	278
Suppositoria Glycerini	"	132
Syrupus Fern Subchlorid	"	123
Tinctura Hammamelidis	"	130
Tinctura Hydrastis	"	150
Tinctura Strophantii	"	275
Trochisei Sulphuris	"	282
Unguentum Comi	" "	97
Unguentum Hammamelidis	" "	149
Solution of Potassio-Cuprie Tartrate (Tests).		

The Antacid Lozenges described on page 59 have been recommended by Prof. Attfield for insertion in the next edition of the *B. P.*

HYPODERMIC MEDICATION.

The administration of medicaments under the skin has in so many cases to be resorted to that a few lines devoted to the subject will not be out of place.

What is a secondary consideration in ordinary remedies,—freedom from all particles of foreign matter, is of paramount importance in the case of hypodermic injections. Solutions should when practicable be prepared fresh, sterilising the water by boiling before adding the medicine. When this is impracticable, preservatives as Salicylic, Thymol, or Chloroform water (*C. & D.* June 21, '90), may be used. A small percentage ($\frac{1}{6}$ to $\frac{1}{4}$ per cent.) of Carbolic Acid is admissible in most cases. The solutions should be preserved in stoppered bottles; and if absolute purity is desired, bottles, syringe, water, drug, etc., should all be sterilised by heat.*

There is no rule with regard to the strength of solutions. When no strength is specified it is most convenient to put the maximum dose in each 10 minims. Throughout the work the proportions of hypodermic solutions are given in grains and minims, as syringes are always graduated in minims, and the minim is less than a grain.

Liquid Vaseline (see page 209) has been used as a medium for injecting substances insoluble in water. It may be used for alkaloids as Cocaine (2 per cent.), Hyoscyamine, Physostigmine, Quinine, etc.; where necessary the alkaloids may first be dissolved in Chloroform. 1 per cent. solutions of Helenin, Iodoform, Phenol, and Phosphorus; 2 per cent. of Iodine, 10 per cent. of Thymol, etc., are also recommended. Insoluble mercurial salts, as Calomel, Salicylate of Mercury, Yellow Oxide of Mercury, etc., may be suspended in this liquid, care being taken to shake the bottle and inject with the point of the needle downwards (See page 149.)

Hypodermic Tablets, although not entirely free from objections, are very convenient; each Tablet contains a definite quantity of the remedy, and may be readily dissolved in any desired quantity of water just before injection. The smallest size of Tablet is generally preferred.

* This may be accomplished by placing in a Steriliser—an oven made of copper and constructed for this purpose.

The following is a list of these : -

	page
Aconitine, $\frac{1}{10}$ and $\frac{1}{50}$ gr.	20
Apomorphine, $\frac{1}{5}$ and $\frac{1}{10}$ gr.	43
Atropine Sulphate, $\frac{1}{10}$, $\frac{1}{50}$ and $\frac{1}{100}$ gr.	50
Caffeine Sodio-Salicylate, $\frac{1}{2}$ gr.	68
Cocaine, $\frac{1}{10}$ and $\frac{1}{2}$ gr.	92
Codeine Phosphate, $\frac{1}{2}$ gr.	94
Colchicine, $\frac{1}{100}$ gr.	95
Cornutine, $\frac{1}{10}$ gr.	109
Curare, $\frac{1}{5}$ gr.	103
Digitalin, $\frac{1}{100}$ gr.	105
Ergotinine, $\frac{1}{50}$ and $\frac{1}{300}$ gr.	109
Homatropine, $\frac{1}{20}$ gr.	51
Hydrargyri Perchloridum, $\frac{1}{10}$ and $\frac{1}{50}$ gr.	146
Hyoscyamine, $\frac{1}{10}$ and $\frac{1}{50}$ gr.	155
Hyoscine, $\frac{1}{100}$ and $\frac{1}{50}$ gr.	156
Morphine Bumeconate, $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$ and $\frac{1}{2}$ gr.	190
Morphine Sulphate, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{2}$, & $\frac{1}{5}$ gr.	191
Morphine Sulphate + Various strengths	50, 191
Atropine Sulphate	50
Physostigmine Eserine, $\frac{1}{100}$ gr.	227
Pilocarpine, $\frac{1}{10}$, $\frac{1}{5}$, and $\frac{1}{2}$ gr.	171
Quinine Hydrobromate, $\frac{1}{2}$ gr.	246
Sclerotic Acid, $\frac{1}{2}$ and 1 gr.	109
Sparteine Sulphate, $\frac{1}{2}$ gr.	271
Strophanthin, $\frac{1}{500}$ gr.	275
Strychnine, $\frac{1}{20}$, $\frac{1}{100}$, $\frac{1}{50}$ gr.	277

Koch's Tuberculin.—The discovery of a remedy for tuberculosis by Dr. Koch of Berlin is without doubt one of the greatest achievements of modern science. The treatment consists in administering hypodermically a peculiar Lymph containing chiefly glycerine and an extract from cultivated colonies of bacilli. The Lymph is sent out in stoppered bottles containing 5 cubic centimetres (about 65 minims). It is a clear brownish fluid, slightly viscid, sp. gr. 1.150. It keeps well in the concentrated condition, but not when diluted. For use it must be mixed with water, a 1 per cent. dilution being usually found most convenient. The dilute solution may be preserved by adding $\frac{1}{2}$ per cent. of carbolic acid, but must not be used if it has become in the least turbid. Before and after use all glasses, etc., must be washed with the carbolised water, the syringe being sterilised by of absolute alcohol.

The syringe used may be of any pattern, but the one recommended by Koch is of a special pattern, fitted with a rubber ball instead of a piston, and holding when filled to the mark nearest the ball 1 cubic centimetre, this being divided into 10 parts.

The dose for an adult ranges from 0·001 to 0·01 cubic centimetre. The injection is made in the skin of the back between the shoulder blades and the lumbar region, because here it leads to the least local reaction, and is almost painless.

For full details, see *B. M. J.* Nov. 22, '90, *et seq.*; *M. R.* Feb. '91; *L.*, etc.

Sir Morell Mackenzie sums up Koch's treatment thus : It is an agent of the highest value for the *detection* of tubercle, a remedy of great potency for certain of the slighter manifestations of tuberculosis, a palliative for some of the distressing symptoms of the severer forms of the disease, and a deadly poison in advanced or unsuitable cases.—*Contemporary Review*, Jan. '91.

Later experience has shown that Koch's Lymph does not fulfil all that was promised of it. See *K.* Feb. '91; *B.M.J.* July 25, '91; *M.R.* June '91, etc.

Liebreich's Remedy for Tuberculosis.—

Cantharides having the property of exciting serous exudation from the capillary vessels, Liebreich argues that if injected into tuberculous tissue it would have a beneficial effect. He recommends an injection of Cantharidate of Potassium (or Sodium) made as follows : —

Cantharidine	...	0.2 grammes.
Potassic (or Soda) Hydrate	...	0.4 "
Warm Distilled Water	...	20 c.c.

dissolve and dilute with distilled water to 1 litre.

This solution is to be administered in injections of one to two cubic Centimetres, equal to 1 to 2 decimilligrammes of cantharidine.—*L.* Mar. 14, '91; *B. M. J.* (*Suppl.*) Aug. 29, '91; *K.* Feb. '91. Causes remarkable amelioration of tuberculous symptoms.—*L.* Feb. 28, '91.

P I L L S .

Pills have always been a popular form for administering medicines, being portable, easily swallowed, and containing accurately divided doses. Pills must not be too hard, unless they are required to dissolve very gradually in the stomach, as they are liable to pass through the body unchanged, nor must they be so soft as to lose their shape. In a tropical climate the former condition is most frequently met with, unless it be during the rains, when pills are very liable to become soft and run together; in any case, pills should always be kept in bottles, and if possible should be obtained coated, a process which not only assists their keeping powers, but renders them tasteless and more easily taken. The old-fashioned practice of gilding or silvering pills is rapidly giving way to the superior methods of Varnishing and coating with Pearl, Sugar, or Gelatine.

Varnishing is most suitable for small quantities of pills prepared by prescription. The varnish consists of sandarach, mastic, or tolu, and forms a good coating when the pills are not to be kept long.

Pearl and Sugar Coated Pills are very elegant, and keep well, but their size is an objection; moreover, pearl coated pills have been frequently found to pass unchanged through the body, while sugar is a bad coating for a damp climate.

Gelatine Coated Pills are not too large, the gelatine coating being extremely thin; they are perfectly soluble, and they preserve the ingredients better than any of the foregoing methods. They are certainly liable to become damp and mildewed during the wet weather, but the writer finds that if the pills be thoroughly dried after being coated, and preserved in stoppered or well-corked bottles, these objections are reduced to a minimum.

Keratin Coated Pills are used when the medicament is desired to pass through the stomach into the intestine unchanged, as in the case of Aloes. See page 176.

When pills are prescribed containing less than 1 grain of medicinal ingredients they are always made up with inert excipients to the size of 1 grain for the sake of uniformity. Such pills are in many cases termed *Granules*.

The following is a list of those pills in most general request in India. Those mentioned in the body of the work are not included here, but may be found by referring to the Index.

Aconite. (Equal to 1 minim Tinct. Aconit., B. P.)

Aloes Dilute (Dr. Hall's Dinner Pills). Aloes Barb. Glycyrrh., Saponis P., Theriae., &c. 1 gr.

Aloes and Asafœtida, B. P., 5 gr.

Aloes and Iron, B. P., 5 gr.

Aloes and Myrrh, B. P., 3 and 5 gr.

Aloes, Myrrh and Iron. Aloes Soc. 2 gr., Myrrh 1 gr., Fer. Sulph. Exsic. 1 gr.

Aloes and Nux Vomica.

Aloes Soc. 1½ gr., Ext. Nuc. Vom. ½ gr.

Aloes, Nux Vomica and Belladonna.

Aloes 1½ gr., Ext. Nuc. Vom. ½ gr., Ext. Belladon. ¼ gr.

Aloin, 10 gr.

Aloin (Sir A. Clark's Dinner Pills).

No. 1. - Aloin, Ext. Nuc. Vom., Ferri Sulph., Myrrh. Soap, of each gr. ½.

One to be taken half an hour before the last meal of the day.

No. 2.—The above *plus* Ipecac. gr. ½.

To be given if the faeces be hard and dry, and there be no special heart weakness.

No. 3. - Same as No. 2, with the addition of Ext. Belladon. gr. ½.

To be given when No. 1 or 2 causes griping.

Alterative (Hunter).

Pil. Rhei Co. gr. 3, Pil. Hydrarg. gr. 2.

Anthelmintic.

Santonin gr. 1, Calomel gr. 1.

Antibilious (Diver.).

Coloc., Hydrarg., and Hyoscyamus.

Anti-Cholera.

P. Capsici, Asafœtida, Pip. Nig., Camph., &c. gr. 1. Pulv. Opii gr. ½.

Antidysenteric (Hunter).

Ipecac. gr. 2, Opii gr. ½, Hydrarg. gr. 1.

Anti-Dyspepsia (Fothergill).

Strych. ½ gr., Ipecac. ½ gr., Pip. Nig. 1½ gr., Gentian, 1 gr.

Aperient (Hunter).

Pil. Coloc. et Hyos. gr. 3, Calomel gr. 2, Podoph.. gr. ½.

Asafœtida Compound, B. P., 5 grs.

Asiatic.

Acid. Arsen. $\frac{1}{16}$ gr., Pip. Nig. 1 gr., Gum Acac. q.s.

Astringent (Hunter).

Acid. Gallic grs. 4 $\frac{1}{2}$, Opii gr. 1.

Bismuth Subnitrate, 2 grs.**Blue (Pil. Hydrarg., B. P.),** 5 grs.**Calomel and Opium.**

Calomel 2 $\frac{1}{2}$ grs., Pulv. Opii 1 gr.

Cannabis Indica Extract, 1 gr.**Cascara and Euonymin.**

Ext. Cascara solid. 3 grs., Euonymin 1 gr.

Cathartic Compound, U. S. P.

Ext. Jalap, Calomel, &c. 1 gr., Ext. Coloc. Co. 1 $\frac{1}{2}$ gr., Gamboge $\frac{1}{2}$ gr.

Cathartic Granules.

Calomel 1 gr., Ext. Aloes 1 gr., Ext. Jalap 1 gr., Gingerin q.s.

Cinchona Alkaloids, 2 and 4 grs.**Clark's Dinner Pills,** *see Alora.***Colocynth Compound, B. P.,** 5 grs.**Colocynth and Calomel.**

Ext. Coloc. Co. 4 grs., Calomel 1 gr.

Colocynth and Hyoscyamus, B. P., 5 grs.**Colocynth, Hyoscyamus, and Blue Pill.**

Ext. Coloc. 3 grs., Ext. Hyoscy. 1 gr., Pil. Hydrarg. 1 gr.

Colocynth, Hyoscyamus, and Calomel,

Ext. Coloc. Co. 3 grs., Ext. Hyoscy. 1 gr., Calomel 1 gr.

Cough Pills.

Ipecac., Ext. Conii M. gr. $\frac{1}{2}$, Ext. Hyosc. gr. 1, Morph. gr. $\frac{1}{2}$, Pil. Scill. Co. grs. 2.

Croton Chloral, 2 grs.**Diaphoretic.**

Morph. Acet. $\frac{1}{16}$ gr., Ipecac. $\frac{1}{2}$ gr., Pot. Nitrat. 1 gr., Camphor $\frac{1}{2}$ gr.

Dover's Powder, 5 grs.**Euonymin and Pepsin.**

Euonymin 1 gr., Pepsin 2 grs.

Grindelia Robusta, 8 grs.

Ipecacuanha, 1 gr.

Iron Reduced, 1 gr.

Iron, Quinine, and Strychnine.

Fer. Redact. 1 gr., Quin. Sulph. 1 gr., Strychnine $\frac{1}{6}$ gr.

Laxative, Vegetable.

Podoph., Ext. Hyos., Ext. Tarax., 55. } gr., Ext. Coloc. Co. 1 gr., Jalap, Leptandrin, 55. } gr., Ol. Menth. Pip.

Lead and Opium, B. P., 5 grs.

Manganese Dioxide, 2 grs.

Morphine Hydrochlorate, 1 gr.

Nitroglycerine, $\frac{1}{100}$ gr.

Opium, 1 gr.

Pepsin, 1 gr.

Pepsin and Bismuth.

Pepsin 1½ gr., Bism. Sub-arb. 3 gr.

Podophyllin, Compound Strong.

Podoph. 1 gr., Ext. Coloc. Co. 2 grs., Ext. Hyoscy. 1 gr.

Podophyllin Compound.

Podoph. 1 gr., Ext. Coloc. Co. 3 grs., Ext. Hyoscy. 1 gr.

Quinine Salicylate, 2 grs.

Quinine and Iron.

Quinine 1 gr., Ferri Sulph. ½ gr., Ol. Caryoph.

Quinine, Compound Antimalarial.

Quin., Cinch. Sulph. 55. 1 gr., Ac. Carboli, Menthol 55. ½ gr., Acid. Arsen. $\frac{1}{4}$ gr., Capsici Pulv. ½ gr.

Rhubarb Compound, B. P., 4 and 5 grs.

Rhubarb and Blue.

Pil. Rhei. Co. 3 grs., Pil. Hydrarg. 2 grs.

Salicin, 2 grs.

Salicylic Acid, 3 grs.

Santonin, $\frac{1}{2}$ and 1 gr.

Strophanthus (equal to 1 minim Tinct. Stroph. B. P. Ad.)

Sulphur Compound.

Sulphur 2½ grs., Pot. Tart. Acid. ½ gr.

Zinc Phosphide, $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{2}$ gr.

Zinc Valerianate, $\frac{1}{2}$, 1, 2 and 3 grs.

URINARY TESTING.

The following comprises the articles and reagents employed :—

1. *Colour.*—Normal urine is of a pale straw or amber colour. Certain drugs have the property of colouring the urine, or the colour may be modified by the presence of blood, bile, etc. Feverish patients usually pass highly coloured urine. Coloured plates showing the different tints are sold for purposes of comparison.

2. *Specific Gravity.*—This should be between 1·010 and 1·025. Diabetes insipidus lowers and diabetes mellitus raises the density. The sp. gr. may be taken by means of a *Urinometer*, an instrument shaped like an ordinary hydrometer, the scale of which shows, on the normal range mentioned above, a mark which indicates the healthy standard. With normal urine the spindle should float within this mark.

A more convenient method, though scarcely so accurate, is by means of the *Specific Gravity Beads*. A tube, open at the bottom, contains six beads of different densities, marked 5, 10, 15, 20, 25, and 30 respectively, and corresponding to the figures 1·005 to 1·030, the heaviest (30) being at the bottom. The number on the bead which neither floats nor sinks indicates the sp. gr. of the liquid. The tube containing the beads is to be put bodily into a vessel containing the urine to be tested, and should some beads float and some sink, none maintaining an indifferent state, water must be added in definite proportion to bring one of the beads to the point of sinking. The figure on this bead is then to be multiplied by the amount of water and urine and the result divided by the amount of urine to obtain the sp. gr.

Example : 2 drachms (120 minimis) of urine cause beads 25 and 30 to sink and 5, 10, 15, and 20 to float ; 20 minimis of water added brings bead 20 to the point of sinking ; then $\frac{20 \times (120 + 20)}{120} = 23\cdot3$ therefore 1·0233 is the specific

gravity. To correct for temperature one unit should be added for every 8° F. above 60° . Thus, in the case quoted, if taken in India at a temperature of 84° F. the result would be $23\cdot3 + 3 = 26\cdot3$, and the sp. gr. 1·0263.

3. *Acidity.*—Normal urine should be slightly acid. The following tests may be used to qualitatively determine acidity or alkalinity :—

Litmus Paper.—The *blue* paper is turned red by acids, the *red* being rendered blue by alkalies. If ammonia be the alkali, the red colour will return on heating the paper.

Liquor Calcis Iodinatus.—See page 166.

4. *Sediment.*—If a sediment be present, heat a little of the urine in a test-tube. If it dissolves it consists of *Urates*. If insoluble, add to a portion some acetic acid,—this will dissolve *Phosphates*; to another (if still insoluble) some hydrochloric acid, which will dissolve *Oxalates*. If still undissolved, the deposit consists of *Uric Acid* or *Albumen*. The former of which may be proved by adding liquor potassæ to a fresh portion, when the sediment will dissolve. The presence of albumen may be determined as described on next page.

The percentage of *Uric Acid* present may be roughly estimated by evaporating 100 c.c. of the urine to half its bulk, adding nitric acid, letting it stand 24 hours, then filtering and weighing the precipitated uric acid.

5. *Microscopical Examination.*—This is of great importance in making an accurate examination of urine, but as it does not come within the scope of the present work, reference must be made to detailed works on the subject.

6. *Chemical Testing.*—This has relation to the detection of the following substances in urine:—Sugar, Phosphates (see above), Albumen, Bile, and Urea.

SUGAR TESTS.

Solution of Potassio-Cupric Tartrate, B.P. (Ad.)—*Fehling's Solution.*—This is directed to be made in separate solutions No. 1 containing 346·4 grains Sulphate of Copper in 500 grain-measures, while No. 2 contains 1½ ounce Caustic Soda and 4 ounces Tartarated Soda in 5000 grain-measures. When required for use Nos. 1 and 2 are to be mixed in equal proportions. 54 minimis of this will be decolorised by ½ grain diabetic sugar, with precipitation of red cuprous oxide.

Compressed Pellets, each representing a definite amount of Fehling's Solution, are also prepared.

Pavy's Solution.—Contains Tartarated Soda, Caustic Potash of each 8·9 grains, Sulphate of Copper 1 835 grain, with ammonia and water, in each ounce. It is not so sensitive as Fehling's Solution, and better adapted for urine-testing.

In determining the presence of sugar in urine it should be borne in mind that glycuronic acid, produced in the urine by the administration of morphine, chloral, chloroform, and some other drugs, also reduces Fehling's Solution—*Ph. J.* Feb. 1, '90.

Indigo-Carmine (Mulder's Test).—This is a very sensitive test for sugar, and is employed in the form of test papers, or compressed pellets (the latter in combination with Sodium Carbonate). One of the latter is to be dissolved in 30 minimis of water by heat in a test-tube, and the urine added drop by drop to the boiling liquid. If sugar be present the colour changes from

blue to violet, red, and finally yellow. The test being very delicate, not more than 2 drops of urine need be added, and care should be taken not to mix air with the liquid. The sugar may be quantitatively estimated by diluting and comparing the colour with a solution of sugar of known strength. The test papers must be used in connection with a Sodium Carbonate paper (see page 319).

Bismuth Test.—This consists in boiling the suspected urine with Subnitrate of Bismuth and Carbonate of Sodium. If sugar be present, black suboxide of bismuth will be thrown down. The absence of sulphur must be previously determined by boiling with oxide of lead, which is blackened by sulphur.

Picric Acid in alkaline solution gives a garnet-red colour with glucose. This test should be confirmed by the Indigo-Carmine test.

Phenyl-hydrazine Hydrochlorate.—This reagent occurs in colourless crystalline scales. It is heated with twice its weight of Acetate of Sodium in solution, and then boiled for 20 minutes with an equal volume of the suspected urine. Yellow crystals of phenyl-glucosazone are deposited on cooling if sugar be present.

Phenyl-hydrazine has also been recommended as an antiseptic, a solution of 1 in 1000 being said to have a preservative effect equal to a solution of mercuric chloride of similar strength. *Ph. J.*, Feb. 2, '89. It gives no precipitate with albumen, but is poisonous in large quantities and unsuitable for a food preservative.

Salicyl-Sulphonic Acid or 'Saliphonic Acid.'—A combination of Salicylic and Sulphuric Acids crystallising in colourless needles, soluble in water. A saturated aqueous solution is a very delicate test for protoids detecting 1 of protein in 100,000, all of which except albumen disappear on heating.

The test acts in the cold, and does not precipitate phosphates, urates, mucin, alkaloids, etc. *H. M. J.*, April 18, '91; *C. & D.*, Apr. 25, '91; *M. E.*, June '91.

ALBUMEN TESTS.

In addition to the well known Nitric Acid test, the following have been introduced.

Acidulated Brine Test.—The reagent consists of a saturated solution of common salt in water containing 1 of diluted hydrochloric acid in 20. It must be carefully added to the urine in a test tube, when if albumen be present a cloudy ring is formed at the junction of the liquids. This precipitate is liable to be redissolved by diluting the liquid.

Potassio-Mercuric Iodide Test.—This is a very delicate test. The reagent contains

Iodide of Potassium 3·22 grammes.

Perchloride of Mercury 1·36 "

Distilled water to 100 cubic centimetres.

It precipitates peptones and vegetable alkaloids as well as albumen: the former, however, clear up on heating. The sample of urine should be rendered slightly

acid by citric or acetic acid and warmed, the reagent then added, and the whole heated.

This test may be made quantitative by adding the reagent drop by drop to 10 c. c. of the acidulated urine until the albumen has all been precipitated, this point being determined by removing a drop of the urine from time to time to a plate and adding a confirmatory solution (1 per cent. Mercuric Chloride) until a red colour is produced, which indicates exhaustion of the albumen. Each drop (2 Cgr.) of the reagent used represents 0.5 grammes albumen per litre.

Potassio-Mercuric Iodide Pellets and Citric Acid Pellets are prepared for the qualitative application of this test.

Sodium Tungstate Pellets.—One of these is to be heated with the acidulated urine to precipitate the albumen, as in the last case. It precipitates peptones but not alkaloids, and will detect 1 part of albumen in 20,000 of urine.

Picric Acid.—A saturated solution of Picric Acid added carefully to the suspected urine in a test tube produces a cloudiness with albumen. It also precipitates peptones, alkaloids, and oleo-resins (as copaiba), but these are dissipated on boiling. As a test for sugar, see page 317.

Picric Acid Pellets are also prepared.

Potassium Ferrocyanide Pellets.—This is a less delicate test than the preceding, but less liable to lead to false conclusions, as it does not precipitate peptones or alkaloids. A Citric Acid Pellet is to be added to about a drachm of urine in a test tube and slightly heated, when cooled a Ferrocyanide Pellet should be added and allowed to dissolve; hydroferrocyanic acid is set free, which will give a cloudiness with 1 part of albumen in 12,000.

This test may also be performed with a **Solution of Ferrocyanide of Potassium**, 5 grains to 1 ounce.

Millon's Reagent. (Nitroso-Nitrate of Mercury).—This gives a yellow coloration in the cold and a red coloration on heating, in the presence of albumen or urea.

Trichloracetic Acid.—A solution of this reagent gives a precipitate with albumen, similar to Nitric Acid. (The acid ($\text{HC}_2\text{Cl}_3\text{O}_2$) occurs in deliquescent colourless crystals, and is used as a caustic for warts, etc., and in diseases of the nose and throat, having the advantage over chromic acid in that its action is localised and more persistent.—*Ph. J.* Nov. 29, '90.)

Sulphocyanide Test.—This is a recent introduction, the solution consisting of

Potassium Sulphocyanide	...	...	1 part
Distilled Water	...	...	10 parts
Dissolve and add			
Acetic Acid	...	...	2 parts.

A few drops added to albuminous urine in a test-tube will produce a turbidity or a precipitate, according to the amount of albumen present.—*J. R. Aug. '00.*

Test Papers consist of slips of paper impregnated with the reagent. They are prepared with Indigo-Carmine (see page 316), Pierie Acid, Potassio-Mercuric Iodide, Potassium Ferrocyanide, and Sodium Tungstate; also with Sodium Carbonate and with Citric Acid, and Compound Papers containing Indigo-Carmine with Sodium Carbonate, and the others with Citric Acid. The Potassio-Mercuric Iodide papers and pellets are also adapted for quantitative testing, a slip of paper being used having printed lines of varying thickness corresponding to different percentages of albumen. The thinnest line discernible through the precipitate shows the percentage of albumen; should none be visible the liquid must be diluted and calculation made accordingly.

BILE TESTS.

Bile Pigment may be detected by adding a drop or two of Nitric Acid to a similar amount of the urine on a white plate, when a play of colours (violet, green, and red) will be observed.

Peptone Test.—A solution consisting of

Peptone	30 grains
Salicylic Acid	1 grain
" " Acid	30 minimis

is to be used, 1 drachm being placed in a test-tube and 20 minimis of the urine added, when an opalescence will appear in proportion to the amount of bile salts present. The precipitate is soluble in acetic or citric acid, but on boiling it only diminishes and does not disappear.

TESTS FOR UREA.

Hypobromite Test—The solution for this test is prepared by mixing 100 grammes Caustic Soda with 250 c. c. Distilled Water, and adding 25 c. c. Bromine carefully. This solution reacts with urea, forming free nitrogen, which is collected in a suitable graduated apparatus. The urea is calculated from the amount of nitrogen.

Hypochlorite Test.—This test is similar to the preceding, substituting Hypochlorite for Hypobromite. The solution is prepared from

Chlorinated Lime	...	...	1 part.
Distilled Water	...	...	3 parts.

Mix and filter. Fill a nitrometer with this solution, introduce 4 c. c. of urine by the funnel, washing it carefully in with a few drops of distilled water. The tube must then be turned over to mix the liquids, and the amount of nitrogen may be read off in a few minutes. A little baryta solution should be added to absorb the carbonic acid, and a few drops of methylated spirit to remove froth.—*Ph. J. Mar. 29, '90.*

To test for Antipyrin in urine, see page 41.

GENERAL TESTING.

Bromine Solution, B. P.—2 minims to 1 ounce. This may be used as a test to distinguish between Antifebrin and Phenacetin. On treatment with the reagent Antifebrin yields crystalline acetparabromanilide, Phenacetin gives no reaction. Exalgine may be distinguished from Antifebrin and Phenacetin by its solubility (1 in 2) in cold chloroform, the two last being insoluble.—*Pharm. Zeit.*

Antipyrin gives a deep blood-red coloration with Liquor Ferri Perchloridi, Phenacetin and Sulphonal only a slight brown colour. See also Tests for Compressed Tablets, page 322.

Chromic Acid, B. P., Chromic Anhydride, CrO_3 .—A 3 per cent. solution may be used as a test for Phenacetin. A few grains of Phenacetin are heated with 1 c.c. of hydrochloric acid until dissolved, then allowed to cool and diluted with 10 c.c. of water. On the addition of the Chromic Acid solution a deep ruby colour is gradually produced.—*Itzert.*

Congo Red.—An aniline colour produced by the combination of tetrazodiphenyl with the sulphonie acids of β -Naphthol. Its behaviour towards acids and alkalies is the reverse of litmus, i. e., it is rendered *blue* by acids, and *red* by alkalies.

Congo Paper is impregnated with a solution of this dye, and is used where the colour of the liquid renders results obtained by litmus unsatisfactory; also in cases of cancer, in which it shows the absence of hydrochloric acid in the stomach.

Malt Extract, Estimation of.—The estimation of the diastatic power of Malt Extract is referred to on page 182, and is conducted as follows:—

No. 1. Starch Solution.

Arrowroot 1 grammie.

Mix with 10 c.c. cold water and add

Boiling water 100 c.c.

Boil for $\frac{1}{2}$ hour, and when cooled to 100° F. make up to 100 c.c.

No. 2. Iodine Solution.

Iodine ... ...	... 0·1 gramme
Iodide of Potassium ...	... 0·8 gramme
Distilled Water...	... 100 c.c.

Dissolve 0·5 gramme Malt Extract in 5 c.c. of water and add to 50 c.c. of the Starch solution, keeping the whole at a temperature of 98° to 100° F., and noting the time. After 5 minutes, and at intervals of 5 minutes or less, remove 4 c.c. of the liquid and add to 1 c.c. of the Iodine Solution in a test-tube. As soon as the diastase of the malt has converted all the starch (its own weight) into sugar, the iodine will cease to give a blue colour with the malt and starch solution. This should take 10 to 15 minutes.—*Ph. J.* Dec. 21, '89.

For a more accurate but less simple process, see *Ph. J.* Nov. 15, '90.

Mayer's Reagent for alkaloids.—Contains

Mercuric Chloride ...	... 18·546 grammes
Potassium Iodide ...	... 49·8 grammes
Distilled water to...	... 1 litre.

This gives a white precipitate with alkaloids, and is used to detect their presence.

Methyl-Orange, Helianthin, Mandarin Orange.—A salt of dimethyl-amido-nzobenzene sulphonic acid, an aniline derivative, one of the coal-tar colours. It forms a yellow solution with water, which becomes pink on addition of an acid, but it gives no indication with carbonic, hydrocyanic, arsenious, oleic, and some other acids. It is specially adapted as an indicator for estimating carbonates.

Phenol-phthalein, B. P.—Produced by the action of phenol on phthalic anhydride. It occurs in yellowish crystals and is used as

Tincture of Phenol phthalein, B. P.—1 in 500 of proof spirit. A colourless liquid, which becomes of an intense red colour in presence of alkalies, and becomes colourless again with excess of acid. It is not suited for ammonia, but is preferable to litmus in the estimation of hydrocyanic acid by nitrate of silver, as it is not affected by the double salt formed.

drazine (see page 317) forms a test for distinguishing between tannic and gallic acids. A small quantity of the acid is to be boiled with double its weight of the reagent for a few minutes, and a few drops then allowed to fall into a large beaker containing water which has been rendered alkaline by caustic soda. A hydrazide of the acid is formed, which, in the case of tannic acid, shows a beautiful blue coloration, subsiding into yellow, while gallic acid gives an orange or golden yellow colour.—*J. S. C. I.* May 31, '90.

Tablets, Compressed, Tests for.—The following table taken from the *Chemist and Druggist*, is useful to distinguish between some of the more recently introduced Compressed Tablets. The writer has found it very reliable and the tests are so simple that they can be applied by any one, either to the tablets or the pure drugs.

Dilute with 1 ounce water.

Place one 5 gr. Tablet in a test tube with 1 drachm Nitric acid.

	In the cold.	On heating.	Dilute with 1 ounce water.
Antipyrin.	Yellowish liquid.	Violent action : Tablet becomes red and dissolves to red solution.	Turbid purple liquid.
Antitoxin.	N.R.	Violent action : orange liquid.	Orange solution, growing turbid if cooled. Crystals partially dissolve.
Phenacetin.	Tablet and liquid turn yellow.	Violent action : yellow liquid : crystals of Picric Acid separate abundantly on cooling.	Pale yellow liquid : white flocculent crystalline mass.
Sulphur.	Violent violet tint. Tablet melts on slightly warming.	Violent action : white crystals separate on cooling and float to the surface.	Colourless liquid, depositing white crystals on standing.
Sulphonol.	Liquid slightly yellow.	No action : Tablet dissolves to a clear yellow solution.	No change.
Urethane.	Dissolves easily without heat.		

Potassio-Mercurio Iodide Solution, B. P.,
Neomér's Reagent.—Contains Iodide of Potassium and
Mercuric Chloride with caustic soda. It is used to test for
traces of ammonia; as for sewage in water, when it throws
down a brown precipitate of di-mercuric ammonium
iodide.

Sonstadt's Solution.—This consists of

Red Iodide of Mercury ...	... 3730 grains
Iodide of Potassium ...	... 3630 grains
Distilled Water ...	... 16 <i>l</i> drachms

Sp. gr. 3·0. It is used to test the specific gravity of
gems. Diamond, Zircon and Topaz sink in it, while
Quartz and Rock crystal, having a lighter specific gravity,
float when immersed in it. Phenakite (Sp. gr. 3·0)
neither floats nor sinks.—*N.*

Tropæoline OO.—An aniline colour (phenyl-
amido-azobenzene sulphonic acid) used as an orange dye
for silk and wool. It is also employed as a test for free
acids, as it gives a yellow solution with water, which
turns crimson on the addition of an acid, under the same
conditions as Methyl Orange (see page 381).

THE METRIC SYSTEM OF WEIGHTS AND MEASURES.

This system, which is referred to frequently throughout this work, although not adopted by English practitioners and pharmacists, is generally adopted in Continental prescribing and dispensing, and exclusively in chemical analysis. In prescriptions written on this system the ingredients are usually written in decimal proportions of a gramme, the word being often omitted, and both solids and liquids are weighed.

Metric Measures of Length.

Millimetre	0·001 of a Metre equals	0·03937 inches
Centimetre	0·01	" "
Decimetre	0·1	" "
Metre	1	Metre "
Decametre	10	Meters "
Hectometre	100	" "
Kilometre	1000	" "
6 Kilometres are equal to 3 miles.		"

Metric Measures of Weight.

Milligramme	0·001 of a Gramme equals	0·015 grains
Centigramme	0·01	" " 0·154 "
Decigramme	0·1	" " 1·543 "
Gramme	1	Gramme "
Decagramme	10	Grammes "
Hectogramme	100	" " 1543·234 "
Kilogramme	1000	" " 15432·348 "
456 Grammes equal to 1 lb.		"

Comparison of English with Metric Weights and Measures

Lineal Measure.

1 Decimetre	about 4	inches
1 Centimetre	"	$\frac{1}{10}$ inch
1 Millimetre	"	$\frac{1}{100}$ "

Weight.

1 Gramme	about	15 $\frac{1}{2}$ grains
1 Decigramme	"	1 $\frac{1}{2}$ "
1 Centigramme	"	$\frac{1}{2}$ "
1 Milligramme	"	$\frac{1}{100}$ "
1 Kilogramme	"	2 lb. 3 oz. (Avoir.)
1 Grain	"	6 centigrammes
1 Ounce (av.)	"	28 $\frac{1}{2}$ grammes
1 lb. (av.)	"	456 grammes

Capacity.

1 Cubic centimetre (c.c.)	about 16 minims (or 1 gramme by weight)
1 Litre (1,000 c.c.)	about 1 pint 1½ oz.
1 Gallon	.. 4½ litres

One gramme is approximately equivalent to

20 drops of fatty oils and tinctures.

25 drops of ethereal oils, chloroform, acetic ether,
spirit of ether, and aqueous fluids

50 drops of ether.

FAHRENHEIT AND CENTIGRADE SCALES.

For convenience most of the temperatures throughout the work have been given according to the Fahrenheit scale. The two scales differ as follows:

Fahrenheit	Freezing point, 32°	Boiling Point, 212°
Centigrade	do.	0°, do. 100°

Rules.

To convert Fahrenheit into Centigrade.—Subtract 32, multiply by 5 and divide by 9.

To convert Centigrade into Fahrenheit.—Multiply by 9, divide by 5, and add 32.

Example.—45° F. to convert to Centigrade.

$$\frac{45 - 32}{9} \times 5 = 7\frac{2}{9}^{\circ} \text{ Centigrade}$$

9

THERAPEUTIC INDEX.

Only those Remedies are included which are mentioned in the body of the Work, so that in every case reference may be had through the Index for doses or methods of application.

Abortion.—See **Miscarriage**.

Acne.—Ac. Salicyl. Ungt.; Calx Sulphurata; Calaminse Lotio; Fer. et Quin. Cit.; Hypophosphites; Hydrarg. Perchlor. Lotio; Ichthyol (Appl.); Lanolin; Mollin; Sulphur. Hypochlor. Ungt.; Sulphur. Troch.; Thymol. Ungt.

Ague.—See **Fever**.

Albuminuria.—Acid. Picric.; Fuschine; Chimaphila; Jaborandi; Nitrite of Amyl; Nitrites; Ozonic Ether.

Alcoholism.—Apomorphia; Arsenic; Camph. Monobrom.; Capsicum; Chloral; Cinchon. Ext. Liq.; Coca; Cocaine; Hydrastis; Hyoscin. Hydrohr.; Lupulin; Morphine; Phosphorus; Picrotoxin; Quinine; Strychnine; Sulphonal.

Amenorrhoea.—See **Menstruation**.

Anæmia.—Arsenic; Convallaria; Hypophosphites; Iron Preps.; Phosphates; Phosphorus; Quinine, and combinations; Ferri et Magnesii Sulphas.

Anæsthetics.—

By Inhalation.—A. C. F.; Æther; Ethyl Brom.; Amyl Hydride; Carbon. Tetrachl.; Chloroform; Cocaine and Chlorof.; Chloramyl; Ethiden. Dichlor.; Hydramyl; Methylene.

Local.—Acid. Carbolic.; Æther; Ethyl Brom.; Amyl Hydride; Anæsth. Ether Comp.; Antipyrin (Hypod.); Boldoin (?); Coca; Cocaine; Erythrophlsnine (?); Methyl Chloride.

Aneurism.—Aconite; Amyl Nitrite; Digitalis; Ergotine; Nitroglycerine; Potass. Iodid.; Morphine and Atropine Tablets.

Angina Pectoris.—Allyl Tribrom.; Amyl Nitris; Isobutyl Nitris; Antipyrin (Hypod.); Arsenic; Camphoric Acid; Morphine (Hypod.); Methylal; Nitroglycerine; Pyridine; Sodii Nitris.

Anthelmintics.—See Worms.

Anthrax.—See Carbuncles.

Antipyretics.—Pil. Ac. Carbol.; Iodo-Salicylic Acid; Antifebrin; Antipyrin; Anti-thermin; Benzanilide; Benzosol; Chinoline; Creasote; Guaiacol; Euphorine; Exalgine; Hydracetin; Kairin; Methacetin; Phenacetin; Phenocoll; Potas. Citras; Pyrodin; Quebracho; Quinine; Resorcin; Salicin; Salol; Sodii Paracresotos; Thermifugin; Guaiacol Carboxylic Acid; Thalline.

Antiseptics.—Acid. Boric.; Acid. Carbolic; Boroglycoeride; Tribromphenol; Trichlorophenol; Ac. Cresylic; Ac. Salicyl.; Camph. Salicyl.; Iodo-Salicylic Acid; Ajowan; Alum. Acet. Liq.; Alum. Sulphite; Pyoktanin (Blue and Yellow); Arbutin; Aristol; Aseptol; Camphor; Chinoline; Chloral; Antiseptol; Creasote; Guaiacol; Creolin; Eucalyptus; Eugenol; Gaultheria Oleum; Hydrarg. Perchlor.; Hydrarg. Cyanid.; Hydr. Zinci Cyanid.; Iodio Hydrarg.; Iodoform; Iodol; Iodum; Lysol; Menthol; Menthae Oleum; Microcidine; Naphthalene; Naphthol; Potass. Permang.; Resorcin; Sal Alembroth; Salol; Sodii Benzoas; Sodii Sulphis; Sodii Sulphocarb.; Sozoiodol; Sulphaminol; Terebene; Thiocamf; Thalline; Thymol; Zinci Chlorid.; Zinci Sulphis; Zinci Sulphocarb.; Guaiacol Carboxylic Acid; Phenylhydrazine Hydrochlor.

Iodoform Substitutes.—Aristol (46 p. c. Iodine); Betol; Cinchouine Iodosulph.; Carvacrol Iodide; Europhen Iodphenin Dermastol; Hydronaphthol;

Iodol (90 p. c. Iodine); Iodo-Salicylic Acid (50 p. c. Iodine); Di-iodo Salicylic Acid (66 p. c. Iodine); Naphthalin; Salol; Sozoiodol (54 p. c. Iodine); Sulphaminol; Thio-resorcin.

Aperients.—See Constipation.

Asthma.—Ethyl Iod.; Ammon. Chlor. Vapor; Amyl Nitris; Anemonin; Arsenical Cigarettes; Caffeine; Cannabis; Chloral; Chloroform; Coca; Cocaine; Codeine; Colchicin; Delphine; Drosera; Euphorbia Pilulifera; Grindelia; Hyoscine; Jaborandi; Nitroglycerine; Pilocarpine; Potass. Cobalto-Nitris; Pinum Pumil. Oleum; Pulv. Stramon. Co.; Pyridine; Quebracho; Sodii Nitris; Stramonium

Baldness.—Chloral; Camph. Linim. Co.; Chlorof. Linim.; Jaborandi.

Bed Sores.—Collodium; Glycerine; Glyc. Ac. Tannic; Iodoform. Ung.; Ung. Zinc Oxidi.; Pelliculine.

Biliousness.—Ammon. Chlor.; Ammon Phosph.; Berberis; Bhawchee; Boldo; Euonymus; Hydrastis; Iridin; Juglandin; Leptandrin; Liver Granules; Podophyllin; Seidlitz Powders; Soda, Ester. Preps. of; Stillingia.

Bladder.—

Catarrh of, and Cystitis.—Arbutin; Betol; Benzozates; Chekan; Chimaphila; Creolin; Collinsonia; Hibiscus; Eucalyptus; Gokhru; Hydrastis; Naphthalene; Pyoktanin, blue; Triticum.

Irritability of.—Belladonna; Cannabis; Chloral; Morphine.

Boils and Carbuncles.—Inject. Acid Carbol.; Aristol; Arsenic; Bellad. Glyc.; Calx. Sulphurata; Camph. Carbol.; Collodium; Ferri Perchlor.; Hypophosphites; Sulphates, Syrup of; Sulphides; Sulphuris Trech.

Brain, Softening of.—Hypophosphites; Iron Preps.; Morrhue Oil; Phosphorus.

Breasts — See Mammas.

Bright's Disease.—Antipyrin; Apocynum; Alkalies; Cannabis; Digitalin; Hydrastis; Jaborandi; Nitroglycerine; Pilocarpine.

Bronchitis.—Agaric; Ammon. Acet. Liq.; Ammon. Chlor.; Anemone; Apomorphine; Bals. Gurjun.; Camphoric Acid; Chekan; Conine; Creolin; Eucalyptus; Grindelia; Ipecac.; Morphine; Morrhue Oil; Piscidia; Pulsatilla; Tar; Inhalations of Carbolic Acid, Creosote, Iodine, Ammon. Chlor.; Terebene; Terpin Hydras; Verba Santa; Euphorbia Pilulifera; Drassena; Phenacetin.

Bruises and Sprains.—Salicylic Suet; Ammon. Chlor. (Lotio); Hamamelis; Hazeline; Hydrastis Tinct.

Burns and Scalds.—Acid. Boric; Lanocroolin; Cocaine Cerat; Gossypia; Iodoform; Thymol Ung.; Vaseline; Lanolin; Mollin; Zinc Oleat; Zinc. Ung.; Aristol.

Calculi.—

Biliary.—Ether Spt.; Amyl Nit.; Anesthetics; Chloral; Morphine; Ferri Succinatus; Nitroglycerine.

Urinary.—Ammon. Phosph.; Ammon. Benz. Antipyrin; Calc. Hippur; Collinsonia; Lithium Salts; Soda. Benz.; Soda. Hippur; Piperazidine; Alkalies.

Cancer.—Arsenic; Condurango; Chloral; Morphine; Phenacetin (as analgetic); Terebinth, Chia.—Locally.—Caustics; Iodoform; Morphine Oleat; Ac. Chromic.; Quinine Salicyl.; Zinc Chlorid.

Carbuncles.—See Boils.

Cardiac Tonics.—Adonidin; Apocynum; Caffeine; Convallaria; Digitalin; Erythrophorum; Strychnine; Strophanthus; Ouabain; Sparteine.

Cataract.—See Eye Diseases.

Otaarrh, Bronchial.—Aldehyde (Vapor); Am. Chlor. (Vapor); Euphorb. Pilulif.; Pulsatilla; Sp. Æth. Nit.

Catarrh, Gastro-Intestinal.—Bismuth Preparations; Betol; Collinsonia; Caffeine; Eucalyptus; Hydrastis.

Catarrh, Nasal.—Carbolised Salts; Antipyrin; Bism. Snuff; Camphor; Capsicum Snuff; Carbon. Tetrachl. Vapor; Cocaine (Appl.); Iodoform Snuff; Eucalyptus; Camphor; Menthol Vapor; Menth. Snuff; Soda. Salicyl. Snuff; Andrographis.

Catarrh, Uterine.—Camph. Carbol. Acid; Iodoform; Plumb. Subacet. Glyc.; Zinc. Sulph.

Catarrh, Vesical.—See Bladder, Catarrh of.

Caustics.—Alum. Exsicc.; Auri et Sodii Chlor.; Creasote; Acid. Arsen.; Ac. Chromic.; Hydrarg. Perchlor; Hydr. Nitr. Liq. Acid.; Pastes; Potass. Permang.; Sodii Ethylatis Liq.; Zinci Chlorid.; Trichloroacetic Acid.

Chlorosis.—Iron Preparations. See also Anæmia.

Cholera.—Carbol. Iodine; Cresalol; Ajowan; Beasbetal; Cotoin (Hypod.); Creasote; Quinalco; Chlorof. et Morph. Tinut; Camphor; Hydrarg. Perchlor; Morphine; Paracotoin; Salol; Resorcin.

Chorea.—Antipyrin; Apomorphine; Arsenic; Calc. Chlorid; Chloral; Conine; Curara; Ergot; Fer. Brom. et Phosph.; Hyoscyamine; Inula; Jatamansi; Morrhue Ol.; Phosphorus; Physostigma and Escerine; Strychnine; Valerianates; Zinci Brom.; Sulphonate.

Colic.—Ajowan; Ether; Camphor; Chloroform; Chlorodyne; Menth. Ol.; Morphine; Nigella.

Collapse.—Ether (Hypod.); Spt. Ether; Sp. Am. Arom.; Ammon. (Inhal.); Amyl Nitrit.

Conjunctivitis.—See Eye Diseases.

Constipation.—Acalypha; Apocynum; Baptisia; Bellad., Aloin, and Strych. Pills;

Berberis Aquifolium; Cascara Sagrada; Convallarin; Curcas; Emblic; Eseridine; Glycerine Inject. and Suppos.; Hydrarg. Subohlor; Iridin; Juglandin; Podophyllin; Frangula; Ricin. Oil; Mist; Seidlitz Powders; Senna Preps.; Sodium, Efferv. Preps. of, Mag. Sulph. Efferv.; Sulphur. Troch; Sodii Sulphovinas; Kaladana; Turpeth.

Convalescence.—Alstonia; Meat Preparations; Cinchona; Easton's Syrup; Quinine; Morrhuae Oleum; Malt Extract; Kariyat.

Convulsions.—Antipyrin; Allyl Tribrom. Chloral Suppos; Cinchona Preps.; Bromides; Belladonna; Morphine; Conine; Hyoscyamine; Sulphonal; Jatamansi; Valerianates.

Cornæ, Diseases of.—See Eye Diseases.

Corns and Warts.—Colloid. Salicyl.; Anacardium; Cocaine; Carbol. Acid; Iodi Linim.; Papain; Cupri Oleas.

Coryza.—See Catarrh, Nasal.

Cough.—Acalypha Indica; Ac. Lactic.; Bals. Gurjun.; Belladon. and Ipecac. Pills; Camphor. Tinct. Co.; Chlorodyne; Codeine; Conine; Gelsemium; Creasotil Vapor; Euphorb. Pilul.; Hibiscus; Hypnal; Helenin; Morphine; Ipecac; Narceine; Picis Pil.; Piscidia; Terpin Hydras; Terebene; Terpinol.

Cystitis.—See Bladder.

Debility.—Armenio; Bondue; Phosphates; Hypophosphites; Malt; Quinine and Cinchona Preps.; Easton's Syrup; Iron Preps.; Kariyat; Morrhuae Oleum; Strychnine; Phosphorus.

Delirium Tremens.—See Alcoholism.

Diabetes.—Antipyrin; Arsen. Brom. Liq.; Codeine; Convallaria; Creasote; Guaiacol; Jaborandi; Thymol; Jambul; Sodii Arsenias; Lithia Water and Soda. Arsen.; Ursell Nitrata; Morphine; Phosphorus; Saccharin; Rhus Glabra; Sulphonal.

Diarrhœa.—*Abies Canadensis*; *Acid. Carbolic.*; *Acid. Lactic.*; *Adansonia*; *Ajowan*; *Agaric.*; *Alstonia*; *Benzbetal*; *Bism. Salicylas*; *Cannabis*; *Chlorodyne*; *Cotoin*; *Eucalypt. Gummi*; *Ferri Pernit. Liq.*; *Per. Salicylas*; *Holarrheas*; *Kariyat*; *Ipecac. Co. Palv.*; *Leptandrin*; *Morphine*; *Mudar*; *Naphthalin*; *Naphthol*; *Podophyllin*; *Ricin. Oleum*; *Quinine-Salicyl.*; *Resorcin*; *Safrol*; *Sodii Phosphas*.

Diphtheria.—*Liq. Magnesiae Boratis*, *Glyc. Ac. Carbol.*; *Carbol. Iodine*; *Ac. Lactic. (spray)*; *Ac. Salicyl. (gargle)*; *Chinoline (gargle)*; *Ioula (appl.)*; *Calx Sulphurat.*; *Eucalypti Ol. Vapor.*; *Ferri Perchlor.*; *Hydroquinone (appl.)*; *Papain (appl.)*; *Pepsin. Glyc. (spray)*; *Pilocarpine*, *Sod. Hyposulph*; *Sodii Chloras*; *Resorcin (appl.)*; *Sodii Benzoas (spray)*; *Iodol (appl.)*; *Ozonic Ether*, *Aristol (insuff.)*.

Dipsomania.—See **Alcoholism**.

Dropsey, Cardiac.—*Adonis*; *Apocynum*; *Caffeine*, *Convallaria*, *Delphine*, *Digitalin*, *Erythrophloium*, *Straphanthus*.

Dropsey, Renal.—*Ammon. Benz.*; *Bryonia*; *Apocynum*; *Delphine*, *Pt. Hydrarg*; *Pilocarpine*, *Kaladina*, *Sodii. Iodid*.

Dysentery.—*Abies Canadensis*; *Adansonia*, *Alstonia*; *Benzbetal*, *Coto*, *Cannabis*; *Eucalypti Gummi*, *Guarana*; *Haematoxylum*, *Hamamelis*, *Holarrheas*, *Hydrocotyle*, *Karyat*, *Granati Cerr.*, *Hydrarg. Perchlor.*, *Ipecac.*, *Ipecac. sine Emetin.*, *Pur.*, *Ipecac. Co.*; *Morphine*; *Naphthalin*, *Terebena Pura*, *Rhus Glabra*; *Mudar*.

Dysmenorrhœa—See **Menstruation**.

Dyspepsia—*Ac. Carbol.*; *Ajowan*; *Bismuth Preps.*; *Boldo*; *Coca*; *Creasoti Pil.*; *Capsicum Preps.*; *Drosera*; *Emblie*; *Hydrastis*; *Leptandrin*; *Malt*; *Menispermin*; *Orexin*; *Pancreas Preps.*; *Papaw Jaios*; *Papain*; *Pepsin*; *Podophyllin*; *Quinine*; *Rumicin*; *Salicin*; *Sodii*

et Potass. Bicarb.; Sod. Sulphoarb.
Stillingia; Sodii Taurochol.; Sodii Nitris.

Dyspncea.—Acid. Carbolic.; Æthyl Iodid.
Ætheris Spt.; Amyl Nitris; Oxonic Ether; Nitro-glycerine; Quebracho; Aspidospermine; Pyridine; Potass. Cobalto-Nitris; Sodii Nitris.

Ear, Diseases of.—

Discharges from.—Glyc. Ac. Tannio; Aristol; Bism. Insuffl.; Alum Insuffl.; Liq. Carb. Deterg.; Boric Acid Insuffl.; Iodof. Wool; Iodof. Insuffl.

Furache.—Cocaine; Atropine; Chloroform (Vapor); Morphine Oleatum; Delphine.

Deafness—Pilocarpine (Hypod.).

Eczema.—Acid. Boric.; Acid. Pieric.; Ac. Salicylic.; Anthrаробин; Aristol; Arsenic; Bismuthi Lotio et Ungt.; Lotio Calamine; Huile de Cade; Ichthyol; Glyc. Bism. Nit.; Kaolin Ung.; Lanolin; Mollin; Naphthol; Plumbi Stearas; Tar; Resorcin; Thio-resorcin; Thiol; Thymol; Zinc Oxide Preps.; Zinc Oleat.; Alkaline Lotions; Eugenol Oint.; Gaulther. Oint.; Ung. Acid. Gynocard.

Elephantiasis.—Calx Sulphurat. (F); Easton's Syrup.

Hemetics.—Acalypha; Apocynum; Apomorph.; Baptisia; Alum; Ipecac.; Zinc. Acet.; Zinc. Sulphas; Mudar.

Enteric Fever.—See **Fever, Typhoid.**

Epilepsy.—Potass. Osmate; Amyleni Hydras; Antifebrin; Apomorphine; Arsen.; Brom. Liq.; Auri Brom.; Camphor Monobrom.; Conine; Bromides; Arsenic Preps.; Iron Salts; Jatamansi; Atropine; Bromal; Brucine; Cannabis; Ozonic Ether; Nitroglycerine; Rubid. Ammon. Brom.; Simulo; Sodii Brom. et Nitris; Strychnine; Valerianates; Zinci Brom., Citras, Lactas, Sulphas; Sulphonal.

Erysipelas.—Ac. Boric.; Inject. Ac. Carbol.; Aconite; Ac. Pieric; Anthrаробин; Anti-febrin; Creasoti et Amyli Pulv., Belladonna;

Digitalin; Ergot; Ferri Perchl.; Lotio Calamin.; Cocain. Cerat.; Colloidum; Iodine Preps.; Potass. Silicea.

Erythema.—Amyli Glycoerinum; Kaolin; Vaseline; Zinc. Oxid.; Zinci Ungt.

Eye, Diseases of.—

Tics.—Abrus; Ac. Boric.; Ung. Hyd. Ox. Flav.; Ung. Iodof.; Aristol.

Ophthalmia and Conjunctivitis.—Acid. Boric.; Trichlorophenol; Boroglycoeride; Iodol; Oleat. Hydrarg. cum Morph.; Ung. Hydr. Ox. Flav.; Hydroquinone; Resorcin; Zinc. Sulph. (Lotio).

Cataract.—Cineraria.

Cornual Ulcers.—Abrus; Pyoktanin (yellow); Atropin; Belladonna; Cocaine; Daturine; Duboisine; Eserine; Hydroquinone; Pilocarpine; Ung. Hydr. Ox. Flav.; Hydrarg. Subchlor.

Iritis.—Atropine; Belladonna; Duboisine; Colchicin; Iodine; Hydrarg. Perchlors.

Pupil, Constrictors of.—Jaborandi; Pilocarpine; Morphine; Physostigma; Eserine.

Pupil, Dilators of.—Atropine; Belladonna; Cocaine; Daturine; Duboisine; Homatropine; Hyoscyamine; Hyoscine.

Locally Dilate; Internally Contract.—Gelsemine; Muscarine.

Fainting.—See Collapse.

Fevera.—

Ague, Remittent, and Intermittent—Ammon. Pieras; Alstonia Constricta; Amyl Nitrite; Andrographis; Antifebrin; Antipyrin; Apium; Aromatic; Asadirachta; Balsamylide; Berberis; Boadna; Chinoline; Cinch. alkaloids; Crocets; Guaiacol; Acid. Salicylic; Salicin; Eucalypt. Glob., Hydrastis; Quinine; Piperine; Warburg's Tincture; Kairine; Thallin; Thermifugin; Phenacetin; Hymenodictyon; Hyperchinain (?); Rhus Glabra; Sodii Paracetat; Euphorine.

Common.—See **Antipyretics.**

Typhoid.—Mist. Ac. Carbol.; Antifebrin; Chinoline; Salicylates; Ammon. Carb.; Cinchona alkaloids; Eucalypt. Glob.; Kairine; Naphthol; Phenacetin; Hydrarg. Napthol-Acet.; Thallin; Thymol.

Typhus.—Baptisia; Belladonna; Cinchona alkaloids; Eucalypt. Glob; Hydrastis; Kairine; Phenacetin.

Gastralgia.—Allyl Tribrom.; Æther Spt.; Cannabis; Coco; Codeine; Bismuth Preps.; Chloroform; Tinot. Chlorof. et Morph.; Creasote; Manganese Oxide; Pepsin; Hydrocyanic Acid.

Gastric Catarrh.—See **Catarrh.**

Glands, Enlarged.—Calc. Chlor.; Calx Sulph.; Iodides; Iron Salts; Iodoform; Iodine (locally and internally); Hydrarg. Oleat.; Sodii Iodid.

Gleet.—See **Gonorrhœa.**

Goitre.—Ac Fluoric.; Ac. Osmic. (Hypod.)

Gonorrhœa.—Gurjunne Bals.; Boldo.) Chimaphila; Chinoline (Inject.); Cocaine (Inject.); Creolin; Gokhru; Iron Salts; Potash Preps.; Salines; Ol. Santal; Bougies; Belladonna; Ol. Eucalypt; Hydrastis; Iodoform; Potass. Permang.; Sodii Silicot.; Oxyiodid. Bism.; Zinci Chlor.; Zinci Sulphas; Zinci Sulphocarb.; Zinci Permang.; Kava-Kava; Thalline; Resorcin; Salix Nigra; Rhus Glabra; Aristol (inj. and bougies).

Gout.—Ammon. Benz.; Caffein. Triiod.; Calo. Hippur.; Colchicin; Coto; Lithium Salts; Manganese Salts; Benzoates; Hippurates; Pinus Pumil. (Oil and Baths); Pot. Iod.; Pot Citras; Bromal; Kava-Kava; Siegesbeckia; Morphine (Hypod.); Sodii Taurocholæa.

Gums, Inflamed.—Alum; Acid Carbolic; Tinot. Iodi; Tinot. Acomite; Potas. Chlor. Tablets and Pastils; Sod. Chloras.

Hæmaturia.—Alum; Ergot; Hama-melis; Ferro Salts.

Haematuria.—See Urine.

Haemoptysis.—Acid. Pyrogallic.; Abies; Agaric; Antipyrin; Atropine (Hypod.); Acid. Sclerotic.; Alum; Digitalin; Ergot; Hamamelis; Hematoxylon; Potass. Succinat.

Haemorrhage.—

Internal.—Bryonia; Acid. Pyrogall.; Acid. Sclerotic; Gum. Rubr.; Ferro-Alumen; Hamamelis; Ferric Salts; Ustilago.

External.—Bryonia; Collodium Stypticum; Colloid. Haemostat.; Alum; Styptic Wool & Lint; Gum. Rubr.; Fer. Perchl.; Ferro-Alumen; Hamamelis; Liq. Zinci Chlor.

Haemorrhoids.—Abies Canadensis; Antipyrin Suppos.; Aristol; Bism. Ungt.; Conii Ungt.; Cascara Sagrada; Hamamelis; Frangula; Chrysarobin; Senna; Sulphuris Troch.

Headache.—

Nervous.—Ethyl Brom. (Inhal.); Antipyrin; Auri Brom.; Butyl-Chloral; Caffeine; Cannabis; Ammon. Spt. Arom., Arsenic; Valerenates; Chloral; Camphor; Guarana; Iron Preps.; Jatamansi; Nitroglycerine; Phenacetin; Zinci Lactas; Zinci Oxid.

Bilious.—Antipyrin; Euonymin; Guarana; Hydrastis; Iridin; Juglans; Leptandrin; Podophyllin; Efferv. Preps. of Sodium; Mag. Sulph. Efferv.

Inflammatory.—Ammon. Chlor.; Hydrarg. Sub-Chlor.; Salicylates.

Heart Disease.—See Cardiac Tonics.

Herpes and Shingles.—Anod. Amyl Colloid.; Bism. Ungt.; Cocain. Cerat.; Glyc. Amyli; Collodium; Hydrarg. Ammon. Ung.; Menthol; Pongam. Ol.; Vaseline; Zinci Oleas and Ungt.; Salines and Saline Aperients.

Hiccough.—Aposmorphine; Spt. Etheris; Camphor; Chloral; Amyl Nitris; Sodii Bicarb. Spt. Chlorof.; Morphine.

Hydrophobia.—Cocaine; Curare; Chloral; Cannabis; Morphine; Nitroglycerine; Physostigmine; Pilocarpine; Anesthetics.

Hysteria.—Allyl Tribrom.; Caffein. Valer.; Camph. Monobr.; Cannabis; Bromides; Iron Salts; Jatamansi; Phosphorus; Pulsatilla; Quinine; Strychnine; Valerianates; Zinc Salts.

Impotence.—Arsenic; Cannabis; Coca; Cocaine; Damiana; Ergot; Ferri Perchlor.; Gokhru; Phosphorus; Strychnine; Zinc Phosphid.

Incontinence.—See Urine.

Indigestion.—See Dyspepsia.

Influenza.—See Catarrh, Nasal.

Insect Bites, &c.—Acalypha; Lotio Ac. Carbol.; Chloroform; Cocaine; Iaq. Ammonium-Sodii Bicarb.; Ipomea. Poultices. (*Scorpion*) Thymol; Thymolite.—See also Snake Bites.

Insomnia.—Acetal, Acetophenone; Amyleni Hydras; Antipyrin; Boldoin (?) ; Bromal; Camph. Monobr.; Cannabis Preps.; Chloral; Chloralamide; Codeine; Butyl-Chloral; Hyoscine; Hypnal; Lupulin; Morphine, Metaldehyde; Methylsal; Narcine; Paraldehyde; Papaverine; Piscidia; Bromides; Phenacetin; Pumilio Baths; Somnal; Sulphonal; Tetonal; Trional; Uralium; Urethane.

Iritis.—See Eye Diseases.

Itch.—See Parasitic Skin Diseases.

Jaundice.—Ammon. Chlor.; Benzozates; Euonymin; Hydrarg. Subchlor.; Hydrastis; Iridin; Ferri Succinat; Manganese. Oxid. et Sulph.; Podophyllin; Senna; Efferv. Sodium Preps.; Stillingia.

Laryngitis.—Aconite; Æthyl Iod. Ammon. Acet. Liq.; Acid. Lactic. (locally); Bism. et Morph. Insuffl.; Creosote (Inhal) Hydrarg. Subchlor.; Menthol (locally); Pini Sylv. Vapor; Pulsatilla.

Leprosy.—*Anacardium*; *Bals. Gurjun.*; *Bhawchhee*; *Gynocardia Oleum*; *Mudar*.

Leucoderma.—*Bals. Gurjun*; *Bhawchhee*; *Gynocardia Oleum*.

Leucorrhœa.—*Abies Canadensis*; *Aristol* (pessaries); *Boric Acid Lotion*; *Alum*; *Hydrastis*; *Pulsatilla*; *Pot. Permang.*; *Sodii Silicas*; *Zinci Sulphoarb.*

Internally.—*Iron Salts*; *Mineral Acids*; *Vegetable Tonics*.

Liver, Congestion and Abscess of.—*Ammon. Chlorid.* with *Tarax.* and *Acid. Nit.* *Mur. Dil.*; *Podophyllin*; *Hydrarg. Subchlor.*

Locomotor Ataxy.—See *Paralysis*.

Lumbago.—*Antipyrin* (*Hypod.*); *Atrop.* *Linim.*; *Bellad. Linim.*; *Capicum*; *Colchicin*; *Morphine* (*Hypod.*); *Capsici Tinct.* *Aeth.* and *Linim.*; *Menthol Plaster*; *Picis Empl.*; *Ung. Veratrino*.

Lupus.—*Acid. Lactic* (pigment); *Camph.* *Salicyl.*; *Aristol*; *Calaminis Lotion*; *Hydroxylamine*; *Phosphorus*; *Ol. Morrhuae*; *Ol. Gynocard.*; *Pot. Iod.* and *Hydrarg. Perahlor*; *Camph.*; *Salicyl.*; *Iodoform*; *Caustic Paste*; *Zinc. Ungt.*; *Koch's Treatment*.

Mammas, Affections of—

Inflammation.—*Belladonna*; *Phytolacca*.

Milk, to Increase.—*Cervus*; *Acid. Lactic*. *Jaborandi*; *Pilocarpine*; *Malt Extract*.

Milk, to Arrest.—*Agaric*; *Antipyrin*; *Atropine*; *Belladonna*; *Conium*; *Ergot*; *Saline Purgatives*.

Swelling Nipples.—*Glyc. Ac.* *Tannic.*; *Cocain*. *Hydrochl.*; *Collod. Flex.*; *Hydrastis*; *Styptic Collloid*.

Mania.—*Cannabis*; *Conine*; *Atropine*; *Bromides*; *Chloral*; *Daturine*; *Digitalis*; *Duboisine*; *Hyoscyamine*; *Hyoscine*; *Gelsemine*; *Morphine*; *Paraldehyde*; *Salphonal*.

Measles.—Aconite; Liq. Am. Acet.; Sp. Eth. Nitr.; Ipecac.

Menstruation, Disorders of—

Anomorrhoea.—Aletris; Apiole; Caulophylin; Ergot; Hydrastin; Gossypii Rad.; Iron Salts; Manganese Salts.; Pot. Permang.; Pulsatilla; Santonin.

Dysmenorrhoea.—Aletris; Antipyrin; Apiole; Anemomin; Butyl-Chloral; Cannabis; Carbon Tetrachl. Vapor; Gossypii Rad.; Pulsatilla; Hydrastis; Salix Nigra; Viburnum; Valerianates; Jatamansi.

Menorrhagia.—Acid. Sclerotic.; Bromides; Cannabis; Ergot; Ferro-Alumen; Hamamelis; Hydrastis; Iron.

Miscarriage.—Aletris; Caulophylin; Codeine; Hydrastis; Morphine; Viburnum.

Mouth Affections.—Abies Canadensis; Acid. Boric.; Glyc. Acid. Carbol.; Aseptol; Calc. Permang.; Chlorof. Ag.; Cocaine; Alum; Pot. Chlor. Pastils and Tablets.

Noovi.—Collodium; Pastes, Caustic; Soda Ethyl. Liq.; Zinc Chloride.

Nasal Catarrh.—See Catarrh.

Nephritis.—Gokhru; Ol. Santal; Triticum.

Nervous Debility and Nervousness.—Coca; Acid. Phosph. Dil.; Ammon. Brom; Camphor; Chloral; Gokhru; Phosphorus; Placidia; Quinine Preps.; Salicin; Strychnine; Salphonol; Zinc Valer.

Neuralgia.—Acid Osmic. (Hypod.); Ac. Iodosalicyl.; Antipyrin; Allyl Tribrom.; Ammon. Chlor.; Monobromacetanilid; Apium; Butyl-Chloral Hydras; Carbon. Tetrachl. (ext.).; Chinoline; Cannabis; Cinchonidine; Colchicin; Cocaine; Methyleose Blue; Galanthus; Hyoscyamine; Exalgine; Phenacetin; Euphorine; Nitroglycerine; Phosphorus; Quinine; Tonga; Bromides; Salicylates.

Locally.—Aconitine; Chlorof. Aconit.; Cocaine; Chloral Camph.; Delphin. Ung.; Menthol Preps.; Morph. Oleat.; Oleanodyne; Ung. Veratrinae.

Night Sweats.—Agaric; Atropine; Belladonna; Camphoric Acid; Chloral; Calcii Chlor.; Cotoin; Homatropine; Pulv. Ipecac. Co.; Hypophosphites; Iron Salts; Jaborandi; Pilocarpine; Muscarine; Picrotoxin; Quinine; Sulphonal; Zinc Oxid.; Potass. Telluras.

Nipples, Sore.—See Mammæ.

Obesity.—Fucus Vesiculosus; Sod. Taurochol.; Alkalies.

Ophthalmia.—See Eye Diseases.

Orchitis.—Anemomin; Pulsatilla; Phyto-lacca; Glyc. Bellad.

Otorrhœa.—See Ear, Discharge from.

Ozaena.—Carbol. Iodine; Aldehydi Vapor.; Aristol.; Creasote; Acid. Boric.; Alum; Alum. Acet. Liq.; Eucalypt. Glob.; Hydrocotyle; Iodoform; Potass. Permang.; Sanitas; Sod. Silicas; Thymol. Sozoiodol; Zinc. Sulph. and Sulphocarb.

Paralysis.—

Agitans.—Hypophosphites; Hyoscyamus; Iron; Eserine; Physostigma; Phosphorus; Strychnine.

Diphtheritic.—Iron; Fer. Iodid.; Pepsin.

Locomotor Ataxy.—Antipyrin; Ol. Morrhæse; Phosphorus; Pilocarpine; Physostigma.

Parasitic Skin Diseases.—Iod. Phenol; Ung. Ac. Carbol; Anacardium; Anthrаробин; Araroba; Chrysarobin; Aristol; Oale. Sulph. Lotio; Creasot. Ungt.; Hydrarg. Oleat; Picrotoxin; Sod. Hyposulph.; Thymol; Papaw; Pon-gam. Ol.; Rhinanthus; Siegesbeckia.

Parasites, Intestinal.—See Worms.

Pediculi.—Croolin; Hydrarg. Oleat.; Hydrarg. Perchlor.; Hydrarg. Ammon.; Hydr-

Ox. Rub.; Naphthalin; Naphthol; Sapo Viridis; Staphisagria; Sulphur; Lotio Calc. Sulph.

Peritonitis.—Antifebrin; Antipyrin; Kairine; Aconite; Belladonna; Digitalin.

Perspiration.—

Excessive.—Abies; Ac. Salicyl. cum Talc.; Kaolin; Zinc. Oleat; Thymolite; Naphthol; Zinc. Oxid.—*Internally*—Acid. Phosph. dil.; Atropine; Bellad.; Ergot; Jaborandi; Picrotoxin; Quinine.

Frigid.—Ac. Boric.; Ac. Carbolic.; Ac. Salicylic.; Liq. Alum. Acet.; Thymolite; Zinc. Oleat.

Phthisis—

Inhalations.—Acetophenone; Ac. Hydrofluor.; Aniline; Creasote; Menthol; Terebone; Iodine; Ipecac spray.

Internally.—Acid. Phenylacetic.; Acid. Phenylpropionic; Aniline; Camph.; Arsenic; Caffeine; Calcium Salts; Codeine; Creasote; Drowns; Koch's Treatment; Lactates; Benzoates; Ol. Morrhue; Pancreatin; Pepsin; Pisidia; Quinine; Salicylates; Hypophosphites; Malt; Guaiacol; Potass. Tellurus.

Externally.—Ol. Gynocard.; Iodine; Aristol.

Piles.—See **Hæmorrhoids**.

Pleurisy.—Bryonia Tinct.; * Liq. Am. Acet.; Apocynum; Jaborandi; Morphine; Quinine.

Pneumonia.—Ac. Salicyl.; Ammon. Carb.; Caffeine; Morphine; Quinine.

Poisoning.—See under respective Poisons.

Prickly Heat.—Pulv. Salicyl. cum Talc.; Dusting Powders; Thymolite.

Pregnancy, Vomiting of.—Antipyrin; Cocaine; Bismuth; Creasote; Ingluvin; Spt. Nuc. Jugland; Ipecac.; Iridin; Morphine; Pep-sin; Quinine.

Pruritus.—Acid. Boric.; Comii Ungt.; Carbol. Acid Lotion; Salicylic Acid; Alum; Alkaline Lotions; Liq. Carbonis Deterg.; Cocaine; Hydrarg. Oleat.; Lotio Nigra; Menthol; Mentholcate.

Psoriasis.—Acid. Carbolic; Ac. Pyrogal.; Anthrаробин; Antifebrin; Araroba; Chrysаробин; Aristol; Hydroxylamine; Lanolin; Mollin; Naphthol; Ac. Salicyl.; Ol. Betuwe; Huile de Cade; Ol. Gynocard.; Ichthiol; Picis Ungt.; Sulphuris Hypochlor. Ungt.; Papaw Juice.

Internally.—Arsenic; Ol. Gynocard; Iron; Ol. Morrh.; Phosphorus; Quinine; Sulphur. Troch.

Puerperal Fever.—Acid. Boric.; Antipyrin; Antifebrin; Jaborandi; Fer. Perchl.; Quinine.

Rheumatism—

Acute.—Ac. Salicyl.; Aconitine Prepa.; Antifebrin; Antipyrin; Belladonnae Chloroform; Methylene Blue; Colchicin; Coto; Fer. Perchl.; Ozonic Ether; Potass. Citr.; Quinine; Salicylates; Salol; Crocolol; Sodii Dithiosalicylas; Trimethylamine; Phenacetin.

Chronic.—Crocolol; Ac. Salicyl.; Ammon. Iod.; Antifebrin; Atropine Linim.; Azadiracht. Oleum; Belladonna; Boldo; Capsici Linim.; Chamaephila; Chlorof. et Camph.; Chlorof. Linim.; Cinchonidine; Colchicin; Coto; Curcas Oil; Betol; Ferri Iod; Fer. Salicylas; Gelsemium; Gaultheria; Chloral et Camph.; Eucalyptus Oil (externally); Hippurates; Phytohaeca; Podophyllin; Rhus; Ol. Pini Sylvestris; Ol. Gynocardis; Muscar; Pumilio Oil and Baths; Ol. Pungens.

Rickets.—Calcium Salts; Phosphates; Acid Phosph. dil.; Iron; Ol. Morrhous; Hypophosphites; Quinine Fluoride.

Ringworm.—See Parasitic Skin Diseases.

Salivation.—Atropine; Alum; Belladonna; Goto; Chlorates; Creasoti Vapor.

Scabies.—See Parasitic Skin Diseases.

Scalds.—See Burns.

Scarlatina.—Ammon. Bens.; Baptisia; Eucalyptus; Salicylic Acid.; Oxonised Oint.

Sciatica.—Acid. Osmic (Hypod.); Aconitine; Antipyrin (Hypod.); Cinchonidine; Blue, Methylene; Colchicin; Lith. Citras; Morph. (Hypod.); Lin. Bellad.; Menthol; Lin. Chlorof.; Methyl Chloride; Ung. Aconitin.; Ung. Veratrin.; Sod. Salicylas; Phenacetin.

Serofula.—Chimaphila; Calcium Salts; Phosphates; Calx Sulphur.; Ferri Iodid.; Iron Salts; Iodine; Iodoform; Ol. Morrhase; Quinine; Runicin; Siegesbeckia; Trifolium.

Sea-Sickness.—Amyl Nitris; Antipyrin; Coosa; Cocaine; Chloral; Chloroform; Nitro-glycoerine; Morph. (Hypod.); Bromides; Nitrites; Resorcin; Kola prepa.

Shingles.—See Herpes.

Sleeplessness.—See Insomnia.

Small-Pox.—See Variola.

Snake-Bite.—Ammon. Liq. Fort.; Potass. Permang.; Strychnine.

Syncope.—Apomorphine; Ether; Spt. Ammon. Arom.; Amyl Nitris; Atropine (Hypod.); Camphor; Chloroformi Vapor; Tinct. Chlorof. et. Morph.; Conine; Ol. Menth. Pip.; Picidin.

Spermatorrhoea.—Belladonna; Ergot; Antipyrin; Fer Perohl.; Phosphates of Iron and Quinine; Easton's Syrup; Gokhra; Salix Nigra.

Spleen Affections.—Fluorides; Quinine; Iron; Tinct. Iodi (externally).

Sterility.—See Impotence.

Sunstroke.—Antipyrin; Apomorphine; Atropin; Morphine (Hypod.); Quinine; Purgative Enemata.

Syphilis.—Æthyl Iodide; Ammon. Iodid.; Auri et Sodii Chlorid.; Cascara Amarga; Condurango; Amyli Iod.; Fer. Iodid.; Hydrocotyle; Mercurial Preparations; Iodides; Phytolacea; Manaca; Mudar; Stillingia; Io-line; Siegesbeckia; Trifolium; Syr. Acid. Hydriodic.; Mercurials locally; Europhen.

Syphilitic Skin Diseases.—Mercury Preps. (Ungt. or Plaster); Iodoform; Resorcin; Aristol; Pix Liquida; Sulphaminol.

Syphilitic Ulcers.—Acalypha; Aristol; Amyli Iod. Pasta; Liq. Hydrarg. Nitr. Acid.; Ointments and Lotions of Mercury; Iodoform; Resorcin; Zinc. Chlor.; Colloid Salicyl.; Iodol; Sozoiodol; Naphthol-Hydrarg.; Thio-Resorcin; Hydrocotyle.

Tetanus.—Camph. Monobr.; Chloral; Curare; Cannabis; Conine; Gelsemium; Morphine; Pilocarpine; Physostigma and Physostigmine; Pelletierine; Strophanthus; Urethane.

Thirst.—Ac. Lactic; Ac. Phosph. Dil.; Coca.

Throat Affections.—

Inflammation and Tonsillitis.—Acid. Boric.; Creasote; Acid. Salicyl.; Aconite Pastils; Belladonna; Ferri Salicyl.; Quinine Salicyl.; Antipyrin; Salicylates; Benzoates; Rhus Glabra (Gargle).

Relaxed.—Garg. Acid. Carbol.; Cocaine; Collinsonia; Glyc. Ac. Tannic. Chlorates in Gargle, Pastil, and Troch.; Inhalations of Am. Chlor., Pinus Sylv.; Ac. Carbolic.; Gum. Eucalypt.; Fer. Perchl.; Ferro-Alumen; Hydrastis Garg.

Tinea.—See Parasitic Skin Diseases.

Toothache.—Chloral et Cocaina; Chlorof. et Camph.; Cocaine; Butyl-Chloral; Gelsemium;

Morph. (Hypod.) ; **Piscidia** ; **Eugenol** ; **Tinet.**
Quin. **Ammon.** ; **Ac. Carbol.** ; **Menthol Combinations**,
Chlorof. cum Camph. ; **Cresote** ; **Potass. Pernang.**

Typhoid Fever. — See **Fever.**

Ulcers. — (See also **Syphilis**).

External. — **Abies Canadensis** ; **Camph.** **Carbol.**
Acid ; **Camph.** **Salicyl** ; **Anacardium** ; **Pyoktanin**
 (blue) ; **Antifebrin** (Ungt.) ; **Aristol** ; **Bism.**
Oxyiod. ; **Bellad.** **Glyc.** ; **Collodium** ; **Eucalyptus**
Oint., etc. ; **Cupri Oleat.** ; **Hydrogen.** **Perox.** ;
Hydroxyle ; **Potass.** **Pernang.** ; **Sanitas**
Preps. ; **Styptic Colloid** ; **Iodol** ; **Soziodol** ;
Iodoform ; **Lanolin** ; **Papain** ; **Naphthalin** ; **Salol** ;
Trifolium (Lotion) ; **Zinci Chlorid.** and **Oleat**.

Internal. — **Bism.** **Oxyiod.** ; **Enonym.** and
Bismuth ; **Iodoform** ; **Iodol**.

Uraemia. — **Amyl Nitris** ; **Apocynum** ; **Caffeine** ; **Digitalin** ; **Jaborandi** ; **Nitroglycerine** ; **Lithii Hippurias** ; **Potass.** **Cobalto-Nitris** ; **Sodii Benzoas**.

Urinary Diseases. — (See also **Calculi**).

Incontinence. — **Antipyrin** ; **Belladonna** ; **Ergot** ; **Ferri Iod.** ; **Fer.** **Perehl.** ; **Camph.** **Monobr.** ; **Gokhru** ; **Lycopodium** ; **Rhus Arounat.** ; **Naphthalin**.

Hæmaturia. — **Camphor** ; **Cannabis** ; **Ergot** ,
Ferro-Alumen ; **Hamamelis**.

Urine Tests. —

Albumen. — **Heat** and **Ac. Nitric** ; **Acidulated Brine** ; **Pot. Merc.** **Iod.** ; **Sodium Tungstate** ; **Picric Acid** ; **Potass.** **Ferrocyanide** ; **Millon's Reagent** ; **Trichloracetic Acid** ; **Potass.** **Sulphocyanide**.

Sugar. — **Fehling's Sol.** ; **Pavy's Sol.** ; **Indigo-Carmine** ; **Bismuth** ; **Picric Acid** ; **Phenylhydrazine Hydrochlorate**.

Bile. — **Nitric Acid** ; **Peptone**.

Acidity. — **Litmus** ; **Congo Red** ; **Liq. Calo. Iodinat**.

Uterus, to Contract. — **Caulophyllin** ; **Ergot Preps.** ; **Gossyp.** **Rad. Cort.** ; **Hamamelis** ; **Hydrastis** ; **Sclerotic Acid** ; **Ustilago**.

Variola.—

Locally.—Ung. Ac. Boric.; Oleum Ac. Carbol.; Glyc. Amyli; Ung. Indoform; Ung. Hydrarg; Collodion; Ung. Zinci Oleat.

Internally.—Antifebrin; Antipyrin; Xylol.

Vesicants.—Ethyl Iodide; Anacardii Ungt.; Chloral; Colloid. Vesicans; Capsicum; Cantharides Prepa.; Liq. Ammon. Fort.

Vomiting.—Bismuth; Cocaine; Ac. Carbolic; Meat Prepa.; Chloral; Ingluvin; Morphine (Hypod.); Nitroglycerine; Effervescent Mixtures; Aerated Waters.

Warts.—See *Corns*.

Whooping Cough.—Vapor Ac. Carbol.; Ac. Cresylic.; Allyl Tribrom.; Ammon. Brom. (Troch.); Bromoform; Antipyrin; Apomorphine; Alum; Bryonia; Benzoates; Bromides; Cannabis; Camph. Monob.; Chloral; Conium; Drusera; Ergot; Grindelia; Pulv. Stramon. Co.; Oxonic Ether; Phenacetin; Narceine; Trifolium; Zinci Oxid.; Zinci Sulphate.

Worms—

Tewis.—Anacardium; Hydrarg. Subchlor.; Embelia; Kalidana; Pelletierine; Granati Ext. Liq.

Acerides.—Alstonia; Bhawhee; Areca; Fer. Perchlor.; Santonin; Naphthalin; Holarrh. Seeds; Papaw Juice.

Wounds.—Acid. Boric; Ac. Carbol. Lotio; Salicylated Plaster; Salic. Camph. Wool; Aristol; Creolin Powder; Lanocreolin; Antiseptic Gauzes and Wools; Liq. Alum. Acet.; Collodium; Styptic Colloid; Mercuro-Zinc Cyanide Gauze; Iodoform; Ichthyol; Cerat. Petrolei; Potass. Permang.; Resorcin; Thymol; Zinci Chlorid.; Salol; Hydrarg. Perchlor. Lotion, etc.; Thio-Resorcin; Naphthol; Sanitary Wood-Wool; see also **Antiseptics**.

Zoster.—See *Herpes*.

INDEX.

A

	PAGE
Abbreviations ...	xii
Abies Canadensis ...	1, 235
" Excelsa ...	234
Abrin ...	2
Abrus Precatorius ...	1
Absolute Ether ...	22
Absolute Phenol ...	6
Absorbent Cotton ...	135
Acalypha Indica ...	2
A. C. E. ...	80
Acetal ...	3
Acetaldehyde ...	26
Acetanilid ...	37
Acetophenone ...	3
Acetopropionic Acid ...	41
Acetum Ipecacuanhae ...	168
Acetyl Benzene ...	3
Acetyl Phenyl-Hydrazin ...	141
Acidulated Brine Test ...	317
Acidum Acetopropionicum ...	41
" Agaricum ...	26
" Alanticum ...	169
" Alphatoluicum ...	14
" Anacardicum ...	34
" Arsenicum ...	47
" Boricum ...	4
" Camphoricum ...	66
" Carbazoticum ...	14
" Carbolicum ...	5
" " Liquefactum ...	6
" " Syntheticum ...	6
" Catharticum ...	261
" Chromicicum ...	320

	PAGE
Acidum Chrysophanicum	44
" Cresylicum	9
" Diiodosalicylicum	18
" Dioxypheinicum	15
" Ergoticum	109
" Eugenicum	14
" Fluoricum	11
" Dilutum	11
" Guaiacol-Carboxylicum	303
" Gynocardicum	138
" Homotoluicum	14
" Hydriodicum	166
" Hydrocinnamicum	14
" Hydroevanicum Dilutum	239
" Hydrofluoricum	11
" Hypophosphorousum	224
" Iodosalicylicum	18
" Lacticum	12
" Dilutum	12
" Laricicum	25
" Levulinicum	41
" Morrhuiicum	192
" Oleicum	198
" Orthophenolsulphonicum	48
" Osmicum	13
" Oxynaphthoicum	196
" Perosnicum	13
" Phenicum	5
" Phenylaceticum	14
" Phenylhydrazin-levulinicum	41
" Phenylpropionicum	14
" Phosphoricum	223
" Concentratum	223
" Dilutum	223
" Glaciale	223
" Piericum	14
" Pieropodophyllicum	237
" Podophyllicum	237
" Pyrogallicum	15
" Pyrogentisicum	163
" Pyrophosphoricum	223
" Salicylicum	18
" Salicyl-Sulphonicum	317

	PAGE
Acidum Saliphonicum ...	317
" Scleroticum ...	109
" Sozolicum ...	48
" Sulphocarbolicum ...	48
" Trichloraceticum ...	318
" Trichlorphenicum ...	9
" Trinitrophenicum ...	14
" Valerianicum ...	34
" Vanillicum ...	296
Aconine ...	19
Aconiti Chloroformum ...	80
Aconitia ...	19
Aconitina ...	19
Aconitum Ferox ...	19
" Heterophyllum ...	19
" Japonicum ...	19
" Napellus ...	19
" Palmatum ...	19
Adansonia Digitata ...	20
Adansonin ...	20
Additions to the R. P. ...	306
Adeps Lanæ ...	178
" " Hydrosus ...	177
Adepsine ...	208
Adonidin ...	21
Adonis ...	21
" Vernalis ...	21
Aerated Antipyrin Water ...	38
" Caffeine Water ...	63
" Lithia Water ...	180
Ether ...	21
" Bromatus ...	23
" Purus ...	22
Ethyl Bromidum ...	23
" Iodidum ...	23
" Nitris ...	23
Ethylene Bromide ...	23
Agaric ...	24, 193
" of Larch ...	24
Agaric Acid ...	25
Agaricin ...	24
Agaricol ...	25
Agaricus Albus ...	24

	PAGE
Agaricus Muscarius ...	193
Agnine ...	177
Ajowan ...	25
Ajwain ...	25
Ajwain-ka-phnl ...	25, 289
Ajwain Oil ...	26
Akra ...	193
Alanine Mercury ...	142
Alant Camphor ...	159
Alantic Acid ...	159
Alantol ...	159
Albumen Tests ...	317
Albuminate of Iron ...	119
Alcohol Amylic Tertiary ...	33
,, Menthyllic ...	184
,, Phenic ...	5
Aldehydum ...	26
,, Dilutum ...	26
Alembroth Cotton Wool Tissue ...	147
,, Gauze ...	147
,, Wool ...	147
Alectrin ...	27
Alectris Farinosa ...	26
Alexandrian Senna ...	261
Allyl Tribromidum ...	27
Aloin, Belladonna, and Strychnine Pills ...	64
Alpha-Naphthol ...	196
Alphatolic Acid ...	14
Alstonia ...	27
,, Constricta ...	28
,, Scholaris ...	27
Alstonine ...	29
Alum, Iron ...	125
Alumen ...	28
,, Exsiccatum ...	28
Aluminium ...	28
Aluminii Acetici, Liquor ...	28
,, Acetotartras ...	28
,, Bisulphis ...	29
,, Chloridi, Liquor ...	28
,, Nitras ...	29
,, Olaus ...	199
,, Silices ...	174

	PAGE
Aluminii Sulphas	28
" Sulphis	29
Amanita Muscaria	193
American Mandrake	236
American Indian Hemp	42
Amido-Benzene	36
Ammonia, Volcanic	29
Ammoniated Glycyrrhizin	134
Ammonii Arsenitis Liquor	47
" Benzoas	29
" Bicarbonas	30
" Bromidum	30
" Carbazotas	15
" Carbonas	30
" Acida	30
" Chloridum	30
" Fluoridum	11
" Hypophosphis	234
" Iodidum	31
" Nitras	31
" Phosphas	31
" Picras	16
" et Rubidii Bromidum	30
" Sesquicarbonas	30
" Sulpho-ichthyolas	157
Ammonio-Ferric Alum	125
" Tartrate	125
Ammonium	29
Amorphous Cocaine	88
" Gelsemine	130
" Hyoscyamine	155
" Phosphorus	220
Amyl Alcohol Tertiary	33
" Colloid	20
" Hydride	32
" Nitris	32
" Tertiary	33
Amylamine	192
Amyloni Hydras	33
Amyli Iodidum	166
Amylum Iodatum	166
Anacardic Acid	34
Anacardium	34

	PAGE
Anacardium Occidentale	34
Anesthetic, Bryant's	80
" Ether	22
" Regnault's	80
Anesthesia, Cocaine and Chloroform	92
Anagræcum Fragrans	99
Analgesine	38
Anamirta Coccus	229
" Paniculata	229
Anamirtin	230
Andira Araroba	43
Andrographis Paniculata	176
Anemone Patens	241
" Pratensis	241
" Pulsatilla	241
Anemonia	242
Anhydrous Creasote	100
" Lanolin	178
Aniline	35
" Camphorate	35
" Colours	35
Anodyne Amyl Colloid	20
Antacid Lozenges	59, 307
Antifat	126
Antifebrin	37
Antifungin	6
Antikamnia	37
Antipyretica, Comparison of	217
Antipyrin	38
" with Sodium Salicylate	218
" Salicylate	39
Antiseptic Cologne	147
" Tablets	147
Antiseptol	86
Antithermin	41
Anthrarobin	36
Antrophores	287
Aperient Fruit Lozenges	251
" Salt	267
Aphrodisiac Pills	104
Apial	41
Apium	41
" Petroselinum	41

	PAGE
Apocynin ...	42
Apocynin ...	42
Apocynum Cannabinum ...	42
Apples, Ferrated Extract of ...	118
Appo ...	191
Apyronin ...	36
Aqua Camphora ...	66
" Chloroformi ...	80
" Picis ...	335
" Ptychotis ...	43
Araroba ...	23
Arbutin ...	45
Arctostaphylos Uva-Ursi	45
Areca ...	45
" Catechu ...	45
Arecoine ...	40
Arecoline ...	46
" Hydrobromate ...	303
Aristol ...	46
Arseniate of Iron ...	119
" Quinine ...	244
" Sodium ...	264
" Strychnine ...	277
Arsenic, White ...	47
Arsenical Cigarettes ...	264
Arsenii Iodidum ...	8
" Oleas ...	199
Arsenious Anhydride ...	47
" Acid ...	47
Arsenium ...	47
Aselline ...	192
Aseptin ...	4
Aseptol ...	48
Asperula Odorata ...	99
Aspidosperma Quebracho ...	243
Aspidospermamine ...	243
Aspidospermamine ...	243
Aspidospermamine Sulphas ...	243
Aspidospermamine ...	243
Atropa Belladonna ...	63
Atropina ...	48
Atropina Sulphas ...	49
" Salicylas ...	50

	PAGE
Atropine: Santonae	50
Auri Bromidum	51
" et Sodii Chloridum	51
Auri Iodidum	51
Aurum	51
Azadirachta	51

B

Bactericides, Kingett's	152
Balsamum Dipteroarpi	52
Gurjunse	52
Baobab	2
Baptisia	52
Baptisin	53
Barberry	53
" Indian	56
Bawachi	56
Bearberry	45
Bear's Weed	298
Beech Creasote	101
" Tar	236
Bref, Essence of	70
" Extract of	70
" Jelly, Peptonised	203
" Peptonised	213
" Peptonoids	213
Belladonna	53
" Cough Granules	54
Benzamilide	55
Benzibetal	55
Benzoate of Ammonium	29
" " Lithium	179
" " Potassium	239
" " Sodium	264
Benzocol	303
Benzoyl-Methyl-Egonine	58
Benzoyl-Phenyl-Amidoacetic Acid	56
Benzoyl-Sulphonic Imide	254
Barberina	56
Barberina Sulphas	56
" Hydrochloras	56

					PAGE
Berberine Phosphas					66
Berberine	...				66
Berberis	...				55
,, Aquifolium					55
,, Aristata					55
,, Asiatica					55
,, Cortex					55
,, Lycium					55
,, Vulgaris					55
Beta-Naphthol	...				195
Betel Leaves	...				45
,, Nut					45
,, Oils					45
,, Phenol					45
Betol	...				258
Betula Alba					235
,, Lenta					127
Betula Alba Oleum					235
Bhang	...				67
Bhawchee					55
Bichloride of Methylene					188
Bicyanide of Mercurry					143
Bikh					19
Bile Tests					319
Biniodide of Mercury					144
Birch Oil					127
,, Tar					235
Biscuits, Jambul and Gluten					173
Bish					19
Bishop's Weed	...				25, 289
Bismuth, Magistry of					58
,, Metallic					67
,, Salta					67
,, Test					317
,, White					68
Bismuthi et Ammonii Citras					67
,, Carbonas					67
,, Citras					67
,, Gallas					69
,, Oleas					199
,, Oxidum					68
,, Oxycarbonas					67
,, Oxychloridum					66

	PAGE
Bismuthi Oxyiodidum ..	58
" Oxynitras ..	58
" Salicylas ..	58
" Subiodidum ..	58
" Subnitras ..	58
Bismuthous Oxide ..	58
Bismuthum ..	57
" Album ..	58
" Peptonatum ..	58
" Purificatum ..	57
Black Alder ..	251
" Draught ..	263
" Haw ..	297
" Oxide of Manganese ..	183
" Willow ..	255
Bladder Wrack ..	126
Blanchard's Pills ..	121
Blaud's Pills ..	121
Blistering Collodion ..	95
Blood, Dried ..	71
Blue Cobosh ..	74
" Flag ..	169
" Gum Tree ..	111
Bog Moss ..	271
Boldin ..	59
Boldo ..	59
Baldas Fragrana ..	59
Baldoin ..	59
Boletus Laricis ..	24
Bonduc Seeds ..	59
Bonducella ..	59
Bonjean's Ergotine ..	107
Boracic Acid ..	4
Boric Acid ..	4
Boroglycoside ..	5
Botany Bay Kino ..	114
Bougie, Betol ..	256
" Cocaine ..	89
" Iodoform ..	161
" " and Eucalyptus ..	161
" Thallin ..	287
Bourbon Water ..	45
Bow's Liniment ..	31

	PAGE
B. P. Additions, 1890 ..	305
" " List of	306
Brandish's Alkaline Solution ..	229
Brand's Essences ..	70
Brazil Wood ..	139
Brazilian Cocoa ..	136
Bromal Hydras ..	60
Bromethyl ..	23
Bromethylene ..	23
Bromide of Ethyl ..	23
Bromidia ..	77
Bromine Solution ..	320
Bromo-Caffeine ..	63
Bromo-Camphor ..	56
Bromoform ..	60
Broom ..	271
Breacine ..	278
Bryant's Anesthetic ..	80
Bryonia Alba ..	60
" Dioica ..	61
Bryonin ..	60
Bryony ..	60
Buckthorn ..	261
Bullock's Blood ..	71
Burdock ..	273
Burgundy Pitch ..	234
Burnett's Disinfecting Fluid ..	300
Butternut ..	173
Butylamine ..	192
Butyl-Chloral Hydras ..	61
Byne ..	181

C

Cacheta ..	61
Cassalpinia Bonduoella ..	59
Caffeina ..	62
Caffeina Oítraz ..	62
" " Effervescente ..	63
" " cum Potassi ..	63
" Brumido ..	63

	PAGE
Caffeina Hydrobromatas	63
" Effervescenta	63
" Phthalas	303
" Sodio-Salicylas	63
" Tri-iodidum	63
" Valerianas	63
Caffyn's Liquor Carnis	71
Otalabar Bean	226
Calazmina Preparata	299
Calcii Chloridum	64
" et Ferri Lactophosphatum Syrupus	13
" Hippuras	64
" Hypophosphis	224
" Lactas	12
" Lactophosphate Syrupus	13
" Permanganas	64
" Sulphidum	64
Calois Iodinate Liquor	166
Calcium	64
Calicaya Bark	82
Calomel	148
Calotropis Cortex	193
" Proceria	193
Calx Sulphurata	64
Camellia Thea	62
Camphor Ball	66
" and Chloral	76
" with Cocaine	77
" Essential Oil of	66
" Peppermint	184
Camphora	66
" Monobromata	66
" Salicylata	18
Camphorated Carbolic Acid	7
" Dentifrices	66
Camphoric Acid	66
Canada Pitch	235
Canadian Fir Tree	1
" Hemp	42
" Mooneed	182
Cannabin Tannas	68
Cannabine	68
Cannabinos	68

	PAGE
Cannabis Indica	67
" Sativa	67
Canton's Phosphorus	64
Capparis Coriacea	208
Capsaicin	69
Caposci Fructus	68
Capricin	69
Capsicum Fastigiatum	68
Capsules, Amyl Nitrite	83
" Amylene Hydrate	94
" Apiol	42
Cantharidin	310
Cantharide of Potassium	310
of Sodium	310
Capsules, Carbolic Acid	7
" Cascara Sagrada	72
" Chloroform	80
" Elastic	130
" Ethyl Bromide	23
" Iodide	34
" Gelatino	129
" de Goudron	235
" Ichthyol	158
" Morrhual	193
" Santal Oil	256
" Tar	235
" Xylool	299
Carbastan, <i>see</i> Gauze.	
Carbazotate of Ammonia	13
Carbazotic Acid	14
Carbolate of Mercury	143
" of Quinine	245
" of Sodium, Solution of	9
Carbolic Acid	5
" Oil	5
" Soaps	9
Carbolised Catgut Ligatures	7
" Iodine Solution	8
" Ligature Silk	7
" Lint	7
" Salve Mulls	9
" Snelling Salts	9
" Tow	7

	PAGE
Carbolised Wool	7
Carbosaphthoic Acid	196
Carbonis Tetrachloridum	70
Cardol	34
Cariina Schimperi	275
Caria Papaya	205
Carna Extractum	70
,, Liqueur	71
Carthagens Bark	82
Carm Ajowan	25
,, Opticum	289
Carvacrol Iodide	47
Casca Bark	109
Cascara Amarga	72
,, Sagrada	72
Cashew Nut	34
Cassia Acutifolia	261
,, Angustifolia	261
,, Obovata	261
Castor Oil Mixture	133
Cataplasma Daturae	274
,, Hydrocotyles	152
Catgut Ligature, Carbolised	7
Cathartic Acid	261
Catheter Oil	8
Oenophyllin	73
Oenophyllum Thalictroides	73
Caustic Pastes	211
Cayenne Pepper	69
Calloidin	96
Centigrade Scale	326
Ceratum Cocaine	89
,, Petrolei	208
Cervaria	297
Cevadilla	296
Cevadilline	296
Cevadine	296
Chalybeate Plaster	120
Chandan	268
Charta Nitesta	239
Chaulmoogra Oil	187
Chavion Butei	45
Chavicol	46

	PAGE
Chekan ...	74
Cheken ...	74
Chekenotin ...	74
Chekenic Acid ...	74
Chekenon ...	74
Chemical Food ...	124
Chequen ...	74
Chian Turpentine ...	288
Chicken, Essence of ...	70
Extract of ...	70
Chimaphila Umbellata ...	74
China Clay ...	178
Chinese Oil of Peppermint ...	186
Chinidin Sulphate ...	86
Chinine ...	244
Chinoidin ...	84
Chinoline ...	75
Chinolini Salicylas ...	73
Tartræ ...	73
Chinolinum ...	75
Chloral-Ammonia ...	77
Antipyrin ...	167
cum Camphora ...	76
et Cocaina ...	77
Cyanhydrate ...	78
Formamide ...	78
Hydræ ...	78
Imide ...	77
et Phenol ...	77
Urethane ...	296
Chloralamid ...	78
Chloralum ...	29
Chloramyl ...	80
Chloride of Methyl ...	186
Chlorine Gargle ...	265
Chlorodyne ...	81
Chloroformatum ...	79
Aconiti ...	80
Belladonna ...	82
Camphoratum ...	84
Chloroform and Cocaine Anæsthesia ...	92
" " Mastic ...	81
Chlorogenine ...	28

	PAGE
Chocolate, Kola	177
Chota Gokhru	135
Chrianna	207
Chromic Acid	320
" Anhydride	320
Chrynarobine	43
Chrysarobinum	43
Chrysophanic Acid	44
Churrus	67
Cicutine	97
Cigarettes, Arsenical	264
Chmolite	174
Cinchona Bark	82
" Calissaya	82
" Excelsa	164
" Febrifuge	84
" Lancifolia	82
" Lucumifolia	82
" Officinalis	82
" Pitayensis	88, 243
" Succirubra	82
Cinchonate Cortex	82
" Rubre Cortex	83
Cinchonidine Salicyla-	85
" Sulphas	85
Cinchonine	85
Cinchonine Hydrochloras	86
" Iodosulphas	86
" Sulphas	86
Cineol	113
Cineraria Maritima	81
Cinnamomum Camphora	66
Citric Acid Pellets	318
Claviceps Purpurea	107
Clemens' Solution	47
Clover	291
Clubmoss	161
" Spores	175, 181
Coal Tar	234
" " Antipyretic, Comparison of	217
Cabalto-Nitrite of Potassium	239
Coca	86
Cocainine	86

	PAGE
Cocaine, Amorphous	88
" and Chloroform Anæsthesia	92
" Phenol	93
Cocainæ	88
Cocainæ Citras	90
" Hydrobromias	90
" Hydrochloras	90
" Saccharis	92
" Salicylas	92
Cocamine	88
Cocculus Indicus	231
Cod Liver Oil	192
" Phosphorised	220
Codeia	94
" and Glycerine Jelly	94
Codeina	94
Codeinæ Phosphas	94
Coffea Arabica	62
Cola Acuminata	176
Colchicoin	96
Colchicina	94
Colchicum Autumnale	94
Colic Root	26
Collinsonia Canadensis	95
Collodion	95
Collodium	95
" Aristol	46
" Belladonnae	53
" Capsici	69
" Flexile	96
" Haemostaticum	96
" Ichthyol	166
" Iodi	164
" Iodol	163
" Salicylicum	17
" Vesicans	96
Colloid Anodyne Amyl	20
" Styptic	96
Colloxylinum	96
Cologne Antiseptic	147
Columbian Bark	82
Comparison of Coal Tar Antipyretics	217
Compressed Tablets, List of	253

	PAGE
Concentrated Phosphoric Acid	223
Cosochinin Sulphate	243
Condurangin	96
Condurango	96
Condy's Fluid	240
Cones, Obstetric	89
Conessi Bark	140
Confectio Emblicae	107
" Sennse	262
" Sulphuris	281
" " Saccharinata	255
Congo Paper	320
" Red	320
Conhydrine	97
Conicine	97
Conina	97
Conine Hydrobromas	97
Conium Maculatum	97
Conquinine Sulphate	243
Contractile Collodion	95
Convallamarin	98
Convallaria Majalis	98
Convallarin	98
Cordial, Aletris	26
" Coca	87
" Kola	117
Corn Silk	181
" Smut	295
Cornutine	109
Corrosive Sublimate	146
Cosmolime	207
Coster's Paste	166
Coto Bark	99
Cotoin	99
Cotton Root Bark	135
" Seed Oil	186
" Saponiodol	271
" Wool	128
" " Tissue	128
" " " Alembroth	147
Cottons, Medicated	135
(Sir also Gossypia and Wool.)	
Cowpe Grass	292

	PAGE
Cough Granules, Belladonna ..	64
Ocamarinum ..	99
Coumaruma Odorata ..	99
Cream, Lanolin ..	178
Cresote ..	100
Creasotum ..	100
Creatine ..	71
Cremor Eucalypti Composita ..	112
Zinci ..	301
Crooline ..	103
Croosote ..	100
Cremalol ..	11
Cresol ..	10
,, Salicylae ..	11
Cresylic Acid ..	10
,, Paraphenylie Ether of ..	11
Creta Camphorata ..	66
Crocus of Mars ..	123
Croton-Ochloral Hydras ..	61
Crown Bark ..	82
Crystalline Hyoscine ..	166
Cuca ..	86
Culver's Root ..	178
Cuprea Bark ..	82
Cupreine ..	83
,, Sulphate ..	84
Cupri Olea ..	200
Curara ..	102
Curare ..	102
Curcas ..	103
,, Purgans ..	103
Cyanide of Mercury ..	143
,, Potassium ..	239
,, Zinc ..	300
,, Zinc and Mercury ..	143
Cytidine ..	294
Cytisus Laburnum ..	294
,, Scoparius ..	271

D

Damiana ..	104
Darutyne ..	263

	PAGE
Datura Alba ...	273
" Fatuosa ...	274
" Stramonium ...	273
Datura Folia ...	273
" Semina ...	273
Daturina ...	48, 274
Deturinase Sulphas	274
Day's Ointment	153
Deadly Nightshade	53
Decoction Aletris	26
" Azadirachta	52
" Cinchona	83
" Granati Radicis	212
" Haematoxyl	138
" Hibisci	140
" Holarrhense	140
" Kudzusala	140
" Tritici	292
Delphia ...	272
Delphina ...	272
Delphinium Staphisagria	272
Depilatory, Sulphide of Calcium	66
Dermatol	59
Desoxyxalizarin	36
Dextrin	182
Dextro-a-propyl piperidine	97
Dhatura ...	273
Diastase ...	182
" Pancreatic	202
Dichloride of Ethidene	110
Dichloronaphthalene	195
Dicotoin	99
Diethyl Aldehydate	3
" Oxide	21
Diethylene Diimine	233
Diethyl Sulphon-dimethyl-methane	278
Digestive Granules	233
" Table Salt	213
Digitalin	105
Digitaline, Crystallised	104
Digitalinum	104
Digitalis Purpurea	104

	PAGE
Dihydroxyl-nicotine	170
Diodo-paraphenol Sulphonic Acid	270
Diodosalicylic Acid	18
Dimethyl Benzene	297
Xanthine	288
Dinitro-Cellulose	96
Dioxyphenic Acid	25
Dipterocarpi Balsamum	62
Dipterocarpus Alatus	62
Incanus	62
Turbinatus	62
Dita Bark	27
Ditaine	27
Dithiosalicylate of Sodium	268
Dithymol Diiodide	46
Diuretin	288
Dobell's Tincture of Podophyllin	187
Dock	253
Donovan's Solution	48
Granules	48
Dover's Powder	168
Drosera Rotundifolia	103
Dry Extract of Malt	182
Thiol	158
Duboisia Myoporoides	103
Duboisina Sulphas	103
Dusting Powders	174
Creolin	102
Dutch Liquid	110

E

Easton's Syrup	124
Pills	124
Eau de Goudron	236
Ergonine	88
Edible Hibiscus	140
Effervescing, <i>see</i> Granular.	
Elastic Gelatine Capsules	130
Elecampane	169
Electuarium Luminivum	262
Elixir Antipyrin	38
Camphor-	66

	PAGE
Elixir Camphorae Monobromatice	66
,, Cascara Sagrada	72
,, Coca	87
,, Erythroxyl et Guaranae	137
Guaranae	137
,, Papain	206
,, Phosphori	221
,, Saccharini	254
,, Sennae	262
,, Sodii Bromaidi	265
Embelia	106
,, Ribes	106
Embelic Acid	106
Emblema Fructus	106
Emble Myrobalan Fruit	106
Emetia	168
Emetin	169
Emetina	168
Emodin	251
Emplastrum Ammoniaci cum Hydrargyro	142
Belladonnae	53
,, Fluidum	53
,, Porosum	54
,, Capsici	69
,, Cocaine	89
,, Daturae	274
,, Ferri	123
,, Hydrargyri	142
,, Menthol	186
,, Picis	234
,, Canadensis	235
,, Plumbi	201
,, Rhois	262
,, Roburans	123
,, Scopolae	261
,, Thunis	193
Empty Gelatine Capsules	129
Emulsio Olei Morrhuae	192
,, ,, ,, cum Calcii Hypophosphate	192
,, ,, ,, Calcii Lactophosphate	192
,, ,, ,, Saccharinata	266

	PAGE
Eupyrumatic Oil	236
Eusma Glycerini	131
Eusmata, Nutritive	71
Enzymes, Pancreatic	202
Epsom Salts, Effervescent	260
Ergot of Rye	107
Ergot of Corn	295
Ergota	107
Ergotio Acid	109
Ergotin	107
Ergotine	107
Ergotinina	109
Ergotininae Citra	109
Ergotinum	107
Eriodictyon California	298
Glutinosum	298
Erythrophloine	110
Erythrophloine Hydrochloras	110
Erythrophlorum Guineense	109
Erythroxylon	86
Coca	86
Eserinine	228
Eserine (Physostigmine)	227
Eserine Salicylas	227
Sulphas	228
Essence of Beef	70
Chicken	70
Mutton	70
Rennet	213
Ether	21
Absolute	22
Anesthetic, Compound	22
Ethyl	21
Hydramyl	22
Hydriodic	23
Hydrobromic	23
Osmic	152
Rectified	22
in Skin Medication	69
Sulphuric	21
Ethereal Liniment of Belladonna	54
Oxygen	163
Tinctures	69

	PAGE
Etheral Tinetur of Belladonna	54
" " Capsicum	69
" " Iodine	165
" " Menthol	185
Ethidene Dichloride	110
Ethyl Carbamate	294
" Ether	21
" Dimethyl Carbinol	33
" Sulphate of Sodium	270
" Phenylcarbamate	295
<i>See also Ethyl.</i>	
Ethylate of Sodium	265
Ethylene, Diethyl Ether of	8
Ethylidene Dichloride	110
Ethylirtes Chloralurethane	295
Eucalombroth Gause	148
Eucalypti Folia	111
" Gummi	113
" Oleum	111
Eucalyptia	112
Eucalyptine	112
Eucalyptol	113
Eucalyptus	111
" Amygdalina	111
" Globulus	111
" Honey	113
" Oleum	111
" Resinifera	114
" Rostrata	113
Eugenia Chequen	74
" Jambolana	172
Eugenic Acid	114
Eugenol	114
Eulylyptol	113
Malyptol	113
Euonymi Cortex	115
Euonymin	115, 205
Euonymus Atropurpureus	115
Euphorbia Hirta	116
" Pilulifera	116
Euphorine	296
Europhen	47
Exalgin	116

	PAGE
Examination of Urine	315, 316
Extract of Beef	70
" " Chicken	70
" " Mutton	70
" Pond's	139
Extractum Abietis Canadensis Liquidum	1
" Acalyphæ Liquidum	3
" Adonis Liquidum	21
" Agarici Liquidum	24
" Spissum	24
" Aletris	26
" Liquidum	26
" Alstoniae Liquidum	27
" Alstoniae Constrictæ Liquidum	28
" Apii Radicis Liquidum	41
" Fructus Liquidum	11
" Apogyni Liquidum	42
" Arecae Liquidum	46
" Baptisiae Liquidum	53
" Belladonnae	54
" Alcoholicum	54
" Fluidum	54
" Berberidæ	56
" Aquifolii Liquidum	56
" Liquidum	56
" Boldo Liquidum	59
" Bynes	182
" Cannabis Indicæ	68
" Carnis	70
" Liquidum	70
" Cascara Amarga Liquidum	72
" Sagrada	72
" " Liquidum	72
" " Incipidum	73
" Chekan Liquidum	74
" Chimaphila Fluidum	74
" Cinchona Liquidum	83
" " Flavæ Liquidum	84
" Coconæ	87
" Liquidum	87
" Collinsonia Liquidum	96
" Condurango Liquidum	97
" Convallariae	98

	PAGE
Extractum Convallarie Líquidum ...	98
" Coto Líquidum ...	99
" Damiana Líquidum ...	104
" Daturae	274
" Ergotes Líquidum ...	107
" Eriodictyi Líquidum ...	298
" Erythrophlebi Líquidum ...	110
" Erythroxyli Fluidum ...	87
" Eualypti Fluidum ...	111
" Euonymi	115
" Líquidum ...	115
" Siccum ...	115, 305
" Euphorbia Pilularis ...	116
" " Líquidum	116
" Fuci Vesiculosi	126
" " Líquidum	126
" Gelonii Alcoholicum ...	131
" Fluidum ...	130
" Gossypii Fluidum ...	136
" Granati Líquidum ...	212
" Grindelise	136
" Líquidum ...	136
" Guarana Fluidum ...	137
" Gummi Rubri Líquidum ...	114
" Haematoxili	138
" Líquidum ...	139
" Hamamelidis	139
" Líquidum ...	140
" Hydrastis Líquidum ...	150
" Jaborandi	170
" Líquidum ...	170
" Jambolanæ Líquidum ...	170
" Juglandis Fluidum ...	173
" Kava-Kava Líquidum ...	176
" Maidis Stigmatum Líquidum ...	181
" Malti	182
" cum Oleo Morrhuae ...	162
" Manacæ Líquidum ...	188
" Naregamiae Líquidum ...	169
" Pancreatis	293
" Phyostigmatis	296
" Phytolaccæ Fluidum ...	299
" Pichæ Líquidum ...	229

	PAGE
Extractum Pini Pumillionis ...	232
" Sylvestris ...	232
" Piscidise Liquidum ...	234
" Pomi Ferratum ...	118
" Ptychotis Liquidum ...	25
" Pulsatille Liquidum ...	241
" Quebracho Liquidum ...	243
" Rhamni Frangulae ...	251
" Liquidum ...	251
Rhois Aromaticae Liquidum ...	252
" Glabre Fluidum ...	253
" Liquidum ...	252
Rumicis Fluidum ...	263
Salicis Nigræ Liquidum ...	256
Santali Albi Liquidum ...	258
Scopolæ Alcoholicum ...	261
" Liquidum ...	261
Secalis Coriuti ...	109
Sennæ Fluidum Deodoratum ...	268
" Leguminum Liquidum ...	263
" Liquidum ...	262
Stillingiae Fluidum ...	272
Trifoliæ Liquidum ...	291
Triticæ Fluidum ...	293
" Liquidum ...	293
Turpethi ...	293
Ustilaginis Liquidum ...	296
Viburni Fluidum ...	297

F

Fabiana Imbricata ...	229
Fabianine ...	229
Fahrenheit Scale ...	326
Falso Hellebore ...	21
Febricide Pills ...	247
Febrifuge, Cinchona ...	84
Fehling's Solution ...	316
Ferrated Extract of Apples ...	118
Forri Aestas ...	119
" Albuminae ...	119

			PAGE
Ferri et Ammonii Citras	...	...	121
" " Sulphas	...	...	125
" " Tartras	...	...	125
" Arsenias	...	...	119
" Benzoas	...	...	119
" Bromidum	...	...	120
" Carbonas Saccharata	...	...	120
" Chloridum	...	...	122
" Citras	...	...	121
" Fluoridum	...	...	12
" Hypophosphis	...	...	224
" Iodidum	...	...	121
" " Saccharatum	...	...	121
" Lactas	...	...	12, 121
" et Magnesii Sulphas	...	...	304
" Malas	...	...	119
" Oleas	...	...	200
" Oxalas	...	...	123
" Oxidum Rubrum	...	...	123
" Oxychloridum	...	...	122
" Oxyhydras	...	...	123
" Perchloridum	...	...	122
" Peroxidum Hydratum	...	...	123
" Phosphae	...	...	123
" Picras	...	...	124
" Protochloridi Syrupus	...	...	305
" Pyrophosphas	...	...	124
" et Quininæ Citras	...	...	245
" Quininæ et Strychninæ Citras	...	...	245
" Salicylas	...	...	124
" Sesquioxidum	...	...	123
" Sodio-Citro-Phosphae	...	...	123
" et Strychninæ Citras	...	...	277
" Subchloridi Syrupus	...	...	123, 305
" Succinas	...	...	125
" Sulphas	...	...	125
" " Exsiccata	...	...	125
" " Granulata	...	...	125
" Valerianas	...	...	125
Ferrier's Snuff	...	...	59
Ferro-Alumen	...	...	125
Ferrum	...	...	118
" Redactum	...	...	125

				PAGE
Ferrum Tartaratum	...	...	...	123
Fir-wool Extract	...	...	...	232
" Oil	...	...	...	231
" Wadding	...	...	...	232
Flexile Collodion	...	...	...	96
Flowers of Camphor	...	...	...	66
" Sulphur	...	...	...	282
Fluid Extracts, <i>see</i> Extracts.				
Fluid Jequirity	...	...	...	2
Fluorhydric Acid	...	...	...	11
Fluoric Acid	...	...	...	11
Fluoride of Ammonium	...	...	...	11
" Iron	...	...	...	12
" Quinino	...	...	...	12, 245
Fluosilicate of Sodium	...	...	...	265
Folia Hamamelidis	...	...	...	140
" Hydrocotyles	...	...	...	151
" Stramonii	...	...	...	273
Food, Pancreatised	...	...	...	205
Foods, Infants'	...	...	...	181
" Peptonised	...	...	...	204
Formyl, Terchloride of	...	...	...	79
Fossiline	...	...	...	207
Fowler's Solution	...	...	...	74
Franciscea Uniflora	...	...	...	182
Frangula Bark	...	...	...	261
Frangulin	...	...	...	251
French Chalk	...	...	...	176
" Oil of Turpentine	...	...	...	220
Fuchsiae	...	...	...	36
Fucus Vesiculosus	...	...	...	126
Fuller's Earth	...	...	...	176
Fungus Laricis	...	...	...	24

G

Gachkaran	...	...	...	...	261
Gadus Morrhua	...	...	...	...	192
Ganggee's Tissue	...	...	...	...	123
Garcinia Indica	...	...	...	...	126
" Kola	...	...	...	...	177
" Purpurea	...	...	...	...	126

	PAGE
Gardine Oleum...	126
Gargarisma, Acid Carbolici ...	8
Chlori ...	266
Gastric Ferments ...	213
Juice ...	213
Gaultheria Procumbens	127
Gaultheria Oleum	127
Gauze Alembroth	147
Aristol ...	47
Carbolic	7
and Cotton Wool Tissue	128
Oreolin ...	102
Eucalambroth	148
Eucalyptus	112
Mercurio-Zinc Cyanide	143
Pyoktanin	36
Salicylic...	17
Sanitas ...	164
Sosiodol	271
Sublimat	147
Thymol ...	290
Zinc Sulphite	302
Gauzes ...	127
Geddes' Extract of Hemlock Bark	1
Gelatine ...	128
Capsules	129
Coated Pills	311
Mass ...	128
Gelatinum ...	128
Gelato-glycerine	128
Gelatum Petroleum	207
Zinci ...	139
Gelatinin	131
Gelatinum ...	130
Amorphous ...	130
Gelatinum Hydrochloras	131
Gelatinum ...	130
Nitidum ...	130
Sempervirina	130
German Ichthyol	168
Soft Soap	260
Glacial Phosphoric Acid	222
Glaucinase	4

			PAGE
Glandulae Lupuli	...	...	180
Glonoina	...	...	197
Glaudated Preparations	...	...	233
Glasside	...	...	234
Glassidum	...	...	234
Gluconide	...	...	234
Glycerine	...	...	131
" Enemata	...	...	131
" Jelly	...	...	128
" Tinctures	...	...	133
Glycerinum	...	...	131
" Abietis	...	...	1
" Acidi Carbolici	...	...	8, 132
" Acidi Gallici	...	...	132
" Acidi Tannici	...	...	132
" Aluminis	...	...	132
" Aluminis et Acidi Tannici	...	...	132
" cum Aqua Rosee	...	...	132
" Belladonnae	...	...	54
" Bismuthi Nitratis	...	...	133
" Boracis	...	...	132
" Ferri Dialysati	...	...	123
" Hydrargyri Perchloridi	...	...	147
" Iodi	...	...	164
" Iodol	...	...	163
" Olei Ricini	...	...	133
" Pepsinis Acidum	...	...	214
" Plumbi Subacetatis	...	...	132
" Podophylli	...	...	237
" Saponatum	...	...	133
" Tragacanthae	...	...	132
Glycerites	...	...	133
Glyceritum Ferri Bromidi	...	...	120
" " Iodidi	...	...	121
" " Hypophosphitum	...	Composi-	
	tum	...	226
Glycerol	...	...	131
Glycerole of Ipsecuanha	...	...	134
" Nax Vomica	...	...	134
Glyceroles	...	...	133
Glyceryl Trinitrate	...	...	197
Glyco-Gelatine	...	...	128
Glycyrrhiza Glabra	...	...	134

	PAGE
Glycyrrhizae Radix ...	134
Glycyrrhizic Acid ...	134
Glycyrrhizin ...	134
Glycyrrhizinum Ammoniatum ...	134
Goa Powder ...	43
Gouasse Ipecacuanha ...	169
Gongri-Lakri ...	278
Gekeroo ...	134
Gokhru ...	134
Gold (<i>See also Aurum</i>) ...	51
Golden Seal ...	149
Gonolobus Condurango ...	96
Gorse ...	249
Gossypii Radicis Cortex ...	133
Gossypium ...	133
" Acidi Benzoici ...	133
" Borici ...	4
" Acid Carbolici ...	7
" Chrysophanicci ...	133
" Tannici ...	133
" Aluminis ...	133
" Arnicae ...	133
" Barbadense ...	133
" Camphorae ...	133
" Cubeba ...	133
" Eucalypti ...	112
" Ferri Perchloridi ...	122
" Fulminans ...	96
" Hamamelidis ...	140
" Herbaceum ...	133
" Krameriae ...	133
" Menthol ...	186
" Optii ...	136
" Resorcin ...	133
" Salicylicum ...	117
" Sosodol ...	271
" Stypticum ...	132
" Thymol ...	299
Granati Cortex ...	212
Granati Radicis Cortex ...	212
Granular Effervescent Antipyrin ...	38
" Caffeine Citrate ...	68

Granular Effervescent Caffeine Hydrobromate	63
" " Exalgine	118
" " Lithium Citrate	180
" " " Salicylate	180
" " Magnesium Sulphate	269
" " Quinine and Iron	
" " Citrate	245
" " Sodium Phosphate	267
" " " Sulphate	269
Granules	311
" Belladonna Cough	64
" Cathartic	313
" de Digitaline	104
" Podophyllin	238
" Tonic Laxative	54
" Liver	238
Green Iodide of Mercury	144
Green Soap	260
Grey Oil	142
Grindelia	186
" Robusta	136
" Squarrosa	136
Griffith's Mixture	120
Guaiacate of Lithium	180
Guaiacol	101
Guaiacol-Carboxylic Acid	303
Guanine	62
Guarana	136
Guaranine	62, 137
Guber Water	48
Gum Plant	136
Gummi Eucalypti	113
" Rubrum	113
Gun Cotton	96
Gunjah	67
Gurjuna Balsamum	52
Guttæ Daturinæ	274
" Duboisinæ Sulphatæ	106
" Homatropine	51
" Hyoscyamine	166
" Physostigmine	228
" cum Cocaina	228

	PAGE
Gettæ Physostigmine Fortioræ	... 238
" Pilocarpine	... 171
Gynocardia Odorata	... 137
Gynocardia Oleum	... 137
Gynocardic Acid	... 138

H

Hammatein	... 139
Hammatoxylin	... 139
Hammatoxylon	... 138
" Campechianum	... 139
Hemostatic Collodion	... 96
Halviva	... 176
Hamamelidin	... 140
Hamamelidis Cortex	... 140
Folia	... 140
Hamamelin	... 140
Hamamelis	... 139
Hamamelis Virginica	... 139
Hard Paraffin	... 206
Haschisch	... 67
Haseline	... 139
Heberden's Ink	... 84
Hebra's Diachylon Ointment	... 201
" Itch Ointment	... 282
Helenin	... 159
Helianthin	... 321
Hellebore, False	... 21
Hemlock	... 97
" Bark	1
" Extract of	1
" Pitch	... 235
" Spruce	1
Hexahydro-pyrazine	... 233
Hibisc Capsule	... 140
Hibiscus Cancellatus	... 140
" Esculentus	... 140
Himrod's Cure	... 273
Hipparote of Lithium	... 180
" Sodium	... 266
Hoffmann's Anodyne	... 23

	PAGE
Holarrhena ...	140
" <i>Antidysenterica</i> ...	140
" <i>Pubescens</i> ...	141
Holy Herb ...	298
Homatropina ...	69
Homatropine Hydrobromate ...	81
Homoquinine ...	83
Homotoluic Acid ...	14
Honduras Bark ...	72
Honey, Eucalyptus ...	113
Hoage Oil ...	238
Hordeum Distichum ...	181
Horsemint ...	289
Humulus Lupulus ...	180
Huxham's Tincture ...	84
Hydraeltin ...	141
Hydramyl ...	32
" Ether ...	22
Hydrargyri Amido-propionas ...	142
" <i>et Ammonii Chloridum</i> ...	147
" <i>et Arsenii Iodidi Liquor</i> ...	48
" <i>Carbolas</i> ...	143
" <i>Chloridum Corrosivum</i> ...	146
" <i>Mite</i> ...	148
" <i>Cyanidum</i> ...	143
" <i>Iodidum Flavum</i> ...	144
" " <i>Rubrum</i> ...	144
" " <i>Viride</i> ...	144
" <i>Naphtholacetan</i> ...	145
" <i>Nitratis Liquor Acidus</i> ...	146
" <i>Oleatum</i> ...	200
" " <i>cum Morphina</i> ...	200
" <i>Oleo-Palmitas</i> ...	200
" <i>Oxidum Flavum</i> ...	145
" <i>Oxidum Rubrum</i> ...	146
" <i>Oxy sulphur</i> ...	148
" <i>Perchloridum</i> ...	146
" <i>Persulphur</i> ...	148
" <i>et Potassii Iodidum</i> ...	144
" <i>Salicylas</i> ...	148
" <i>Subchloridum</i> ...	148
" <i>Succinimidum</i> ...	149

	PAGE
Hydrargyri Tannas ...	149
" Thymolacetas ...	149
Hydrargyrum ...	141
" Ammoniatum ...	142
" cum Creta ...	142
" Naphthodicum ...	145
Hydrastin ...	150
Hydrastina ...	150
Hydrastine Hydrochloras ...	151
Hydrastinina ...	151
Hydrastinina Hydrochloras ...	151
Hydrastis ...	149
" Canadensis ...	150
" Rhizoma ...	149
Hydrate of Amylose ...	33
" Butyl-Chloral ...	61
" Chloral ...	75
Hydrated Oresoote ...	100
Hydride of Amyl ...	32
Hydriodic Acid ...	166
" Ether ...	23
Hydrobromic Ether ...	23
Hydrochinon ...	153
Hydrocinnamic Acid ...	14
Hydrocotone ...	99
Hydrocotyle Asiatica ...	161
Hydrocotyles Folia ...	151
Hydrocyanic Acid ...	239
Hydrofluoric Acid ...	11
Hydrogen, Sulphuretted ...	65
Hydrogenii Peroxidum ...	152
Hydrosaphthol ...	196
Hydroquinine ...	83
Hydroquinone ...	153
Hydrous Peroxide of Iron ...	129
" Wool-Fat ...	177
Hydroxyl, Solution of ...	152
Hydroxyamine ...	154
" Hydrochlorate ...	154
Hygrine ...	88
Hymenodictyon ...	154
" Exanthem ...	154
Hymenodictyonine ...	154

	PAGE
Hyoscina	186
Hyoscine Hydriodas	186
" Hydrobromas	186
" Hydrochloras	186
Hyoscyamina	186
Hyoscyamine Hydrobromas	186
" Sulphas	186
Hyoscyamus Niger	186
Hyperchinain	240
Hypnal	157
Hypnone	3
Hypobromite Test	319
Hypoehlorite Test	319
Hypodermic Injections , <i>see</i> Injections .	
" Medication	308
" Tablets (<i>see also</i> Tablets)	308
Hypophosphites	224
Hypophosphorous Acid	224
Hypoquebrachine	243
Hyposalphite of Sodium	266

I

Ichthyol	157
" Artificial	168
Ilex Paraguayensis	62
Imido-succinate of Mercury	149
Indorjao Tulk	141
" Sherim	141
Indian Barberry	66
" Hemp	67
" Liquorice	1
" Pennywort	151
" Seenna	281
" Turmeric	149
Indigo-Carmine	316
Insin	274
Infants' Foods	182
Infusum Abri	2
" Aleutonic	27
" Andrographis Compositum	176
" Barberis	86

	PAGE
Infusum Cinchonæ Acidum ...	84
" Cocæ ...	87
" Ergotæ ...	108
" Gokhru ...	135
" Jaborandi ...	170
" Malti ...	182
" Sennæ ...	262
Liquivis ...	314
Inhaler, Chloride of Ammonium	31
Inhalatio Iodi cum Conio ...	164
<i>See also Vapores.</i>	
<i>Injectiones, Hypodermic.</i> —	
Injectio Acidii Carbolici ...	8
" Acidii Soleroticæ ...	109
" Aconitine ...	30
" Antipyrin	39
" " et Cocainæ ...	39
" Apomorphine ...	43
" Atropinæ ...	49
" Caffeïne ...	63
" Cocainæ Hydrochloratæ ...	91
" Conine Hydrobromatæ ...	97
" Oarsæ ...	103
" Ergotini ...	106
" Ferri Perchloridi ...	122
" Homatropinæ ...	61
" Hydrargyri ...	142
" " et Cocainæ ...	143
" " Iodidi Rubri ...	144
" Hyoschinæ Hydrobromatæ ...	156
" Hyoscyaminiæ ...	156
" Iodi Fortissimæ ...	165
" Morphinæ ...	189
" " et Atropinæ ...	50, 189
" Nitroglyceriniæ ...	196
" Physostigmatis ...	226
" Physostigminæ Salicylatis ...	237
" " Salphatis ...	228
" Picrotoxinæ ...	230
" Pilocarpinæ Nitratæ ...	171
" Quininæ Hydrobromatæ ...	245
" " Salphatis ...	246
Insufflatio Iodeformi ...	161

	PAGE
Iaula Helonium	159
Iautin	159
Iodate of Quinine	246
Iodia	273
Iodic Hydrarg	304
Iodide of Ammonium	31
Ethyl	23
Iodide of Gold	61
Iron	121
Mercury, Green	144
" and Potassium	144
" Red	144
" Yellow	144
Sodium	266
Starch	166
Iodine	163
Solution, Carbolised	8
Iodised Oil	163
Phenol	8
Starch	166
Wine	166
Wool	166
Iodoform Substitutes	327
Iodoformum	159
Aromaticum	161
Bituminatum	162
Iodo-Glycerine Solution	164
Iodol	162
Iodo-Salicylic Acid	18
Iodosulphate of Cinchonine	86
Iodo-Vaseline	162
Iodphenin	47
Iodium	163
Ipecacuanha	167
Belladonna, and Nux Vomica	
Pills	54
sine Emetina	167
Guansee	169
Iron (<i>See</i> Ferrum)	113
Alum	126
Iridin	169
Iris Versicolor	169
Irisin	169

		PAGE
Isinglass Plaster, Salicylated ..	..	17
Iso-butyl Nitrite .. ..	..	33

J

Jaborandi .. ..	..	170
Jaboridine .. ..	..	170
Jaborine .. ..	..	170
Jamaica Dogwood .. ..	..	234
Jambolanse Semina .. ..	..	172
Jambul .. ..	..	172
„ and Gluten Biscuits .. ..	..	173
Jambalin .. ..	..	172
Japaconine .. ..	..	9
Japaconitine .. ..	..	19
Japanese Oil of Camphor .. ..	..	66
Jarisch's Ointment .. ..	..	15
Jatamansi .. ..	..	173
Jatropha Curcas .. ..	..	103
Jelly, Codeine and Glycerine .. ..	..	94
Jequirity .. ..	..	1
„ Fluid .. ..	..	2
Jeye's Disinfecting Fluid .. ..	..	102
Juglandin .. ..	..	173
Juglans .. ..	..	173
„ Cinerea .. ..	..	173
„ Regia .. ..	..	173
Jujubes, Pumilio Oil .. ..	..	232
Jungle Senna .. ..	..	261
Juniper Tar Oil .. ..	..	236
Juniperus Oxycedrus .. ..	..	236

K

Kairin .. ..	..	173
Kaju .. ..	..	34
Kala Dhatura .. ..	..	274
Kaladana .. ..	..	174
Kaolin .. ..	..	174
Kapas .. ..	..	126
Karanj .. ..	..	236

	PAGE
Kariyat ..	176
Karpo Kariahi ..	66
Karwa Inderjao ..	141
Kava-Kava ..	176
Kavaine ..	176
Kavaline ..	176
Keratin ..	176
Keratin Coated Pills ..	311
Kieselguhr ..	175
Kingsett's Bactericides ..	152
Kino, Botany Bay ..	114
Kirmala ..	260
Kirmani ..	260
Kobert's Extract of Ergot ..	109
Koch's Remedy for Tuberculosis ..	309
" Syringe ..	310
Kokum Butter ..	126
Kola ..	176
" Preparations ..	177
Kombic Acid ..	274
Kudassia ..	140
Kreat ..	176
Kreosote ..	100

L

Laburnum ..	294
Lactate of Calcium ..	13
" Iron ..	12, 121
" Quinine ..	246
Lactic Acid ..	12
Lactopeptine ..	214
Lactophosphate of Calcium, Syrup ..	13
" and Iron, Syrup ..	13
Lal Chandan ..	258
Lamellin Atropine ..	50
" Cocaine ..	91
" Physostigmine ..	227
Lanolin ..	176
Lano-Creolin ..	109
Lanolin ..	177
" Oream ..	178

	PAGE
Lanolin Ointment Base	... 178
" Pomade	... 178
" Soap	... 178
Lanolinum	... 177
" cum Cocaina	... 177
" Hydrargyri	... 178
Lapis Calaminaris Præparatus	... 299
Lappa Minor	... 273
Laricic Acid	... 25
Laxative Granules, Tonic	... 54
Lead, <i>see</i> Plumbum.	
Leptandra Virginica	... 178
Leptandrin	... 178
Levico Water	... 48
Levalinic Acid	... 41
Liebig's Extract	... 70
Liebreich's Remedy for Tuberculosis	... 310
Ligature Silk, Carbolised	... 7
Ligatures, Carbolised Catgut	... 7
Light Atropine	... 49
" Oil of Wood Tar	... 235
Lily of the Valley	... 98
Lime, <i>see</i> Calcium.	
" Muriate of	... 64
" Salts	... 64
Linimentum Ammoniacum	... 31
" Atropini	... 49
" Belladonnae	... 54
" " Æthereum	... 54
" " Compositum	... 54
" Camphoræ	... 66
" " Compositum	... 66
" Capsici	... 69
" Exsiccans	... 211
" Hydrargyri	... 142
" Iodi	... 164
" Menthol	... 185
" Opii Ammoniatum	... 31
" Scopolæ	... 261
Lint	... 179
" Borio	... 4
" Carbolic	... 7
" Eucalyptus	... 179

	PAGE
Lint Iodoform 162	
„ Iron Perchloride 122	
„ Marine 235	
„ Paper Fibre 179	
„ Salicylic 17	
„ Styptic 122	
„ Sublimate 147	
„ Thymol 179	
Linteum 179	
Lipanin 179	
Liquid Carbolic Acid 6	
„ Vaseline 209	
„ Thiol 168	
Liquor Abri 2	
„ Acidi Osmici 13	
„ Picrici 15	
„ Æthyl Bromidi 23	
„ „ Nitritis 23	
„ Aluminii Acetici 28	
„ Ammonium 31	
„ „ Fortior 31	
„ „ Fortissimus 32	
„ Ammonii Arsenitis 47	
„ „ Citratis 32	
„ „ „ Fortior 32	
„ Antisepticus 102	
„ Aristol Æthereus 47	
„ Armenicalis 47	
„ Arsenici Bromatus 47	
„ Arsenii et Hydrargyri Iodidi 48	
„ Atropini Sulphatis 60	
„ Bismuthi et Ammonii Citratis 57	
„ Brucina 278	
„ Calcii Chloridi 64	
„ Calcis Iodinate 166	
„ Carbonis Detergens 236	
„ Carnis 71	
„ Cascara Aromaticus 73	
„ Caulophylin et Pulsatille 74	
„ Chloroformi Compositus 81	
„ Chrysarobini 44	
„ Cocaine Hydrochloratis 92	
„ Epispasticus 96	

	PAGE
Liquor Euonymin et Bismuthi	... 116
" " et Cascara Sagrada	... 116
" " et Pepsinae	... 116
" Ferri Albuminati	... 119
" " Chloroxydi	... 123
" " Dialysatus	... 122
" " Hypophosphitis Fortis	... 224
" " Peptonati	... 119
" " Perchloridi	... 123
" " Fortior	... 122
" " Pernitratia	... 123
" Gelseminae Hydrochloratis	... 131
" Glenoini	... 198
" Hydrargyri Nitratis Acidus	... 145
" " Perchloridi	... 146
" Hypophosphitum Compositus	... 225
" Iodi	... 164
" Jaborandi	... 170
" Lithise Effervescentia	... 180
" " cum Sodii Arseniate	180
" Magnesii Boratis	... 5
" Morphine Acetatis	... 189
" " Bimeconatis	... 190
" " Hydrochloratis	... 190
" " Sulphatis	... 191
" Nitroglycerini	... 198
" Pancreaticus	... 203
" Pepsini	... 214
" Pepticus	... 214
" Picis Carbonis	... 234
" " Ligni	... 235
" Podophylli	... 238
" " cum Belladonna	et
" " Strychnina	... 238
" " et Pepsinae	... 238
" Potassae Arsenitis	... 47
" Potassae, Brandish	... 239
" Potassii Permanganatis	... 240
" Rusci Detergens	... 236
" Sodii Arsenitis	... 264
" " Carbolatis	... 9
" " Ethylatis	... 265
" Stillaginis Compositus	... 273

Liquor Strychniae Hydrochloratis...	277
" Thymol	290
" Trinitrii	198
" Zinci Chloridi	300
Liquorice	134
" Indian	1
Lasterine	200
Lasteris-in	7
Lithia Water and Arseniate of Sodium	180
Lithii Benzoxes	179
" Bromi-bum	179
" Carbonas	180
" Citras	180
" Guanicas	180
" Hippurias	180
" Salicylas	180
" Sulpho-salicyolas	158
Lithium	179
" -Icthyol	158
" Sozoiodol	271
Litmus Paper	315
Longwood	138
Lotion Paste	211
Lotiformis, Sublimate	147
Lotto Aech Carbolic	8
" Ammonia Chloridi	31
" Bisauthi	68
" Calamine	209
" Calci Sulphurati	65
" Flava	146
" Nigra	148
" Rubra	301
Loxa Bark	82
Lozenges, <i>see</i> Trochisci.	
Lugol's Solution	164
Lund's Oil	8
Lepulinum	180
Lycopodium	175, 181
" Clavatum	181
Lymph, Koch's	309
Ivaol	204

M

			PAGE
MacDade's Succus Alterans	...	...	273
Mackintosh Sheeting	...	...	7
Magenta	...	...	36
Magistry of Bismuth	...	...	68
Magnesii Boratis, Liquor	...	...	5
... Sulphas Effervesens	...	...	269
Magnesium Silicate	...	...	174
Maidis Stigmata	...	...	181
Majun	...	...	67
Malate of Iron Wine	...	...	119
Malt	...	...	181
... Extract	...	...	182
... " Combinations	...	...	182
... " Estimation of	...	...	320
Maltose	...	...	182
Maltum	...	...	181
Manaca	...	...	182
Mandarin Orange	...	...	321
Manganese	...	...	183
Manganesii Hypophosphis	...	...	183
... Oxidum Preparatum	...	...	183
... Phosphas	...	...	183
... Sulphas	...	...	183
Manganesium	...	...	183
Mangani Sulphas	...	...	183
Manganous Phosphate	...	...	183
... Sulphate	...	...	183
Margosa Bark	...	...	51
Marine Lint	...	...	235
Marking Nut-Tree	...	...	35
Mass, Gelatine	...	...	128
Mate	...	...	62
May Apple	...	...	236
Mayer's Reagent	...	...	321
Meadow Saffron	...	...	94
Meat Extract	...	...	70
... Juice	...	...	71
Medicated Cotton	...	...	136
... Gauzes	...	...	127
Melia Azadirachta	...	...	58
Melilotus Officinalis	...	...	29

	PAGE
Menispermin	183
Menispernum Canadense ...	183
Mentha Arvensis ...	184
" Piperita ...	184
Menthiodol ...	185
Menthol ...	186
" Combinations ...	186
" Cones ...	186
" " Pencils ...	186
" " Wool ...	186
Mentholeate ...	186
Menthylic Alcohol ...	186
Mercur-β-Naphthol Acetate ...	145
Mercuric Chloride and Tartaric Acid ...	147
Mercurio-Vegetal ...	182
Mercuro-Zinc Cyanide ...	143
Mercury, <i>see</i> Hydrargyrum.	
Mercury-Soziodol ...	271
Meta-di-Hydroxybenzene ...	249
Metaldehyde ...	210
Metaphosphoric Acid ...	228
Methacetin ...	185
Methyl-Acetanilid ...	116
Methyl-Arbutin ...	45
Methylal ...	187
Methylated Ether ...	22
Methyl Chloridum ...	186
Methyl-Conine ...	97
Methylene ...	188
" Bichloride ...	188
" Blue ...	35
" Dimethyl Ether of ...	187
Methyl Ether of Pyrocatechin ...	101
Methyl-guanido-acetic Acid ...	71
Methyl-Morphine ...	94
Methyl-Orange ...	221
Methyl-Phenacetin ...	217
Methyl-Phenol ...	10
Methyl-Salicylate ...	127
Methyl-Theobromine ...	62
Methyl-Violet ...	35
Methysticin ...	176
Metoxymethyl-dichinoxylin Hydrochloride	249

	PAGE
Metric System ...	... 324
Meuphrosine ...	... 77
Microcidine ...	... 196
Millon's Reagent ...	... 318
Mistura Acidi Carbolici ...	... 8
,, Amyl Nitritis ...	... 33
,, Bismuthi et Pepsinæ Composita ...	... 57
,, Cresotii ...	... 100
,, Exalgin ...	... 148
,, Ferri Aromatica ...	... 84, 118
,, Composita ...	... 120
,, Olei Ricini ...	... 133, 205
,, Olei Santali ...	... 258
,, Sennæ Composita ...	... 262
,, Smilacis Composita ...	... 273
,, Spiritus Vini Galli i Saccharinata ...	... 255
,, Terebinthine Chie ...	... 287
Mollinium ...	... 260
Monarda Punctata ...	... 289
Monk-y Bread Tree ...	... 20
Monobromacetanilid ...	... 37
Monobromide of Camphor ...	... 66
Mono-chlorethyl Chloride ...	... 110
Monophenylamine ...	... 35
Morphin ...	... 188
Morphina ...	... 188
Morphinæ Acetas ...	... 189
,, Hydrobromas ...	... 189
,, Hydrochloras ...	... 189
,, Lactas ...	... 190
,, Meronas ...	... 190
,, Phthalas ...	... 190
,, Sulphas ...	... 190
,, Tartaras ...	... 191
Morphine ...	... 188
Morrhuae Oleum ...	... 192
Morrhunc Acid ...	... 193
Morrhunc ...	... 192
Morrhuel ...	... 192
Mortons's Iodo-Glycerine Solution ...	... 164
Mountain Pine Oil ...	... 233
Mudar ...	... 193
Magrele ...	... 197

Mulder's Test	...	...	...	...	...	316
Mulla	...	...	...	...	...	193
" Plaster, <i>see</i> Plaster Mulla.						
" Salve, <i>see</i> Salvo Mulla.						
Muriate of Lime	...	...	...	...	...	64
Muscarina	...	...	...	...	...	193
Muscarine Nitras	...	...	...	...	...	194
" Sulphas	...	...	...	...	...	194
Mutton, Essence of	...	...	...	...	...	70
" Extract of	...	...	...	...	...	70
Myrrh, Camphorated	...	...	...	...	...	66
Myrtus Chekan	...	...	...	...	...	74

N

Naphthalene	...	...	...	...	...	194
" Tetrachloride	...	...	...	...	...	195
Naphthalimum	...	...	...	...	...	194
" Precipitatum	...	...	...	...	...	194
Naphthalol	...	...	...	...	...	268
Naphthol	...	...	...	...	...	195
" cum Comphora	...	...	...	...	...	196
" Carbomo Acid	...	...	...	...	...	196
" Mercury	...	...	...	...	...	145
" Salol	...	...	...	...	...	268
Naphthyl Alcohol	...	...	...	...	...	196
Narcina	...	...	...	...	...	191
Narcotina	...	...	...	...	...	191
Nardostachys Jatamansi	...	...	...	...	...	178
Naregania Alata	...	...	...	...	...	169
Naregamine	...	...	...	...	...	169
Narvel	...	...	...	...	...	297
Nativelle's Crystallized Digitaline	...	...	...	...	...	104
Natrium Sulpho-ichthyolicum	...	...	...	...	...	158
Nebula Acidii Lactici	...	...	...	...	...	12
" Ferri Perchloridi	...	...	...	...	...	122
" Papain	...	...	...	...	...	206
Nectandra	...	...	...	...	...	99
Nepaul Pepper	...	...	...	...	...	69
Nessler's Reagent	...	...	...	...	...	328
Neutralising Tablets	...	...	...	...	...	285
Nigella Sativa	...	...	...	...	...	197

	PAGE
Nim Bark	51
Nim Tree	51
Nicot	293
Nitrated Paper	239
Nitrite of Amyl	32
" Butyl	32
" Ethyl	23
" Propyl	32
Nitroglycoerinum	197
Nitrophenol	77
Nitroso-Nitrate of Mercury	318
Nutritive Extract	70
" Wine	71
" " with Iron	71

O

Oakum	235
Obstetric Cones	89
Oil of Camphor	66
" of Cotton Seed	136
" of Turpentine	231
" " " French	220
" " " Hydrate of	286
" Vaseline	209
<i>See also</i> Olea.	
Oiled Silk Protective	7
Oils, Empyreumatic	236
Ointment Base, Lanolin	178
Ointments, <i>see</i> Unguentia.	
Oks	140
Oleanodyne	199
Oleata	198
Oleates	198
Oleatum Aconitine	20
" Atropine	199
" Cocaine	199
" Hydrargyri	200
" " cum Morphina	200
" Morphine	189, 199
" Quinine	199

				PAGE
Oleatum Strychninæ	...	...	...	199
" Veratrinæ	...	...	...	199
" Zinci	...	...	...	201
Oleature of Bhawchee	...	...	...	57
Olei Ricini Mistura	...	...	...	133
Oleic Acid	...	...	...	198
Oleite	...	...	...	201
Oleo-Resina Capsici	...	...	...	69
" Lupulini	...	...	...	181
Oleum Ajowan	...	...	...	25
" Aristol	...	...	...	46
" Azadirachtae	...	...	...	52
" Betula Alba	...	...	...	236
" Cadinum	...	...	...	236
" Carbolicum	...	...	...	8
" Cinereum	...	...	...	142
" cum Cocaina	...	...	...	89
" Declinæ	...	...	...	209
" Eucalypti	...	...	...	111
" Fagi Pyroligneum	...	...	...	236
" Garcinia	...	...	...	126
" Gaultheriae	...	...	...	127
" Gynocardia	...	...	...	137
" Homatropinæ	...	...	...	60
" " cum Cocaina	...	...	...	60
" Iodi	...	...	...	165
" Jatamansi	...	...	...	173
" Mentha Piperite	...	...	...	186
" Morrhuae	...	...	...	192
" " cum Aethere	...	...	...	22
" " cum Croasato	...	...	...	192
" " Phosphoratum	...	...	192,	220
" Phosphoratum	...	...	...	220
" Picis Rectificatum	...	...	...	235
" Pini Pumilionis	...	...	...	232
" " Sylvestris	...	...	...	231
" Pongamiae	...	...	...	238
" Ptychotis	...	...	...	25
" Ricini	...	...	...	133
" Rosci	...	...	...	236
" Santali	...	...	...	258
" Staphisagriae	...	...	...	272
Osmann	...	...	...	26

	PAGE
Osmium, Oil of ...	26
" Water ...	25
Opium, Indian ...	191
Orange Root ...	149
Orexin ...	202
" Hydrochlorate ...	202
Orthophenol-sulphonic Acid ...	48
Osmate of Potassium ...	18
Osmic Acid ...	18
Osmium Tetroxide ...	18
Ousabain ...	275
Ousabao ...	275
Ourari ...	102
Oxalates in Urine ...	316
Oxy-acanthine ...	56
Oxyammonia ...	154
Oxychinoline-Ethyl Hydride ...	173
" " Hydrochlorate ...	173
Oxygen ...	153
" Ethereal ...	153
Oxygenated Water ...	152
Oxymethyl-Aacetanilid ...	185
Oxynaphthoic Acid ...	196
Oxytoluyltropeine ...	50
Ozokerit ...	207
Ozone Papers ...	239
Ozonic Ether ...	152
Oxonised Ointment ...	153

P

Pale Bark ...	82
Pan Supari ...	45
Pancreatic Diastase ...	202
" Emulsion ...	205
" Enzymes ...	203
" Juice ...	202
Pancreatin ...	203
Pancreatised Food ...	205
Pao da Cobra ...	278
Papain ...	205
Papaver Somniferum ...	191

	PAGE
Papaverina	191
Papaw Juice	206
Papayotin	205
Paper Fibre Lint	179
Papier Iodogène	166
Papoose Root	74
Para-acet-anisidin	185
Para-acet-phenetidin	215
Paracoto	98
Paracotoin	99
Para-cresol Salicylate	11
Paracetosato of Sodium	266
Paracetosic Acid	247
Para-di-oxy-benzene	153
Paraffin Wax	206
Paraffinum Durum	206
" Liquidum	209
" Molle	207
Paraglobulin	2
Paraguay Tea	63
Paraldehyde	209
Pararosaniline Hydrochloride	36
Parrish's Syrup	124
Parsley	41
Pasque Flower	241
Pasta Abri	2
" Amyli Iodidi	166
" Caustica	211
" Costeri	166
" Londinensis	211
" Viennensis	211
" Zinci Chloridi	212
" " " cum Opio	212
Pasta	211
Pastilli, List of	129
Pastillas Acidi Carbolicci	8
" Ammonii Chloridi	129
" Bismuthi Carbonatis	67
" " " " cum Morphine	
" Acetate	67
" et Potassii	
" Chloratis	129
" Cocca	87

Pastillæ Cocainæ Hydrochloratis	...	...	...	...
" "	"	"	cum Mor-	
			phina	2
" Codeinæ	...	...	...	94
" Iodoformi	...	...	...	162
" Morphinæ Acetatis	...	...	...	129
" Potassæ Chloratis	...	...	...	129
" Thymol	...	...	...	290
Paullinia Sorbilis	...	...	...	136
Pavesi's Collodion	...	...	...	96
Pavy's Solution	...	...	...	316
Pearl-coated Pills	...	...	...	311
Pearson's Solution	...	...	...	264
Pedalium Murex	...	...	...	134
Pelletierina	...	...	...	212
Pelletierinæ Hydrobromatas	...	...	...	212
" Sulphas	...	...	...	212
" Tannas	...	...	...	213
Pelliculine	...	...	...	178
" Powder	...	...	...	175
Pentylene	...	...	...	32
Pepper	...	...	...	233
Peppermint Camphor	...	...	...	184
Pepsin	...	...	...	213
Pepsina Porci	...	...	...	213
Pepsinum Saccharatum	...	...	...	214
Peptone	...	...	...	215
" Test	...	...	...	319
Peptonised Beef	...	...	...	215
" " Jelly	...	...	...	205
" " Tea	...	...	...	204
" " Suppositories	...	...	...	215
" Edemata	...	...	...	205
" Foods	...	...	...	204
" Gruel	...	...	...	204
" Milk	...	...	...	204
" Milk Gruel	...	...	...	204
" Soup	...	...	...	204
Peptonising Powders	...	...	...	203
Peptonoids, Beef	...	...	...	215
Periodates, Weaver's	...	...	...	166
Perles, Apiol	...	...	...	42
" Carbolic Acid	...	...	...	9

	PAGE
Permanganate of Calcium ...	... 64
" " Potassium...	... 240
" " Sodium ...	... 240
" " Zinc ...	... 301
Peroxylic Acid ...	... 13
Peroxide of Hydrogen ...	... 152
Pessaries, Cocaine ...	... 89
" Conine ...	... 97
Petrolatum ...	207, 208
Pertroleine ...	... 207
Petroleum Jelly ...	... 209
" Soap...	... 209
" Spirit ...	... 32
Petroselinum Sativum ...	... 41
Peumus Boldus ...	... 59
Pharbitis Nil ...	... 174
Pharbitisin ...	... 174
Phellandrene ...	... 111
Phenacetin }	... 215
Phenacettinum }	... 215
Phenazone ...	38, 806
Phenazonum ...	... 38
Phenic Acid ...	... 6
" Alcohol...	... 5
Phenocoll ...	... 218
" Hydrochlorate	... 218
Phenol ...	... 5
" Absolute ...	... 5
" Cocaine ...	... 92
" Iodised ...	... 8
" -Mercury ...	... 143
" -Phthalein ...	... 321
" Sodique ...	... 9
Phenylacetamide ...	... 37
Phenylacetic Acid ...	... 14
Phenyl-Benzamide ...	... 55
Phenyl-dihydro-chinazolin ...	... 202
Phenyl-dimethyl-pyrazolone ...	... 38
Phenyl Ether of Salicylic Acid ...	... 256
Phenyle, Soluble ...	... 102
Phenylhydrazine Hydrochlorate ...	... 317
" -Levulinic Acid ...	... 41
" Tart ...	... 321

			PAGE
Phenyl-Methyl-Ketone	...	...	3
Phenyl-propionic Acid	...	...	14
Phenyl-Urethane	...	...	295
Phloridzin	...	...	219
Phlorizin	...	...	219
Phloroglucin	...	...	296
Phosphates in Urine	...	...	316
Phosphoric Acid	...	...	322
Phosphorised Oil	...	...	220
Phosphorus	...	...	219
" Amorphous	...	...	220
" Canton's	...	...	64
" Pills	...	...	221
Photoxylin	...	...	96
Phthalate of Caffeine	...	...	303
" Morphine	...	...	190
Phyllanthus Emblica	...	...	106
Physic Nut	...	...	103
Physostigmine Venenosum	...	...	226
Physostigmatis Semen	...	...	226
Physostigmina	...	...	227
Physostigmine Salicylas	...	...	227
" Sulphur	...	...	228
Phytalbumose-a	...	...	2
Phytolacca Decandra	...	...	228
Phytolacce Radix	...	...	228
Phytolaccin	...	...	229
Piehi	...	...	229
Pieramnia Bark	...	...	72
Pierate of Ammonia	...	...	15
Pieric Acid	...	...	14, 317, 318
Pieric Acid Pellea	...	...	318
Pierupodophyllin	...	...	237
Pierupodophyllic Acid	...	...	237
Pierosclerotin	...	...	108
Pierotin	...	...	230
Pierotoxin	...	...	239
Pierotoxinia	...	...	230
Pierotoxinum	...	...	229
Pigmentum Chrysarobini	...	...	44
" Ferri Perchloridi Forte	...	...	122
" " " Dilutum	...	...	123

	PAGE
Pigmentum Iodi	165
" Papain	208
" Picis cum Iodo	165
" Picrotoxini	230
Pills	311
" List of Formulae	312, 313, 314
" <i>see</i> Pillule.	
Pilocarpi Foliola	170
Pilocarpidine	170
Pilocarpina	171
Pilocarpina Nitrata	171
" Hydrochloratas	171
Pilocarpus Pennatifolius	170
Pilula Acidi Arseniosi	47
" Carbolici	9
" Aloin, Belladonnae, et Strychninae	64
" Aphrodisica	104
" Atropinae	60
" Calcii Sulphidi	65
" Camphorae	68
" Cascara Sagrada	72
" Codeinæ Composita	94
" Comine	97
" Creasoti	101
" Ergotini	108
" " Composita	108
" " cam Quinina	108
" Euonymi	115
" " Composita	116
" Febricida	247
" Ferri Arsenicalis	47
" " (Blaud's)	121
" " Carbonatis	120
" " Iodidi	121
" " Quininae et Strychninae	124
" Hydrargyri	142
" " Iodidi Flavi	143
" " " Rubri	144
" " " Viridis	145
" " Subchloridi Composita	148
" Iodoformi	160
" Ipecacuanhae, Belladonnae, et Nucis	
" " Vomicas	64

	PAGE
Pilula Ipecacuanhae cum Scilla	... 163
„ Phosphori, B. P.	... 220
„ Formulae for	... 221
„ Picis Liquidae	... 235
„ Podophylli	... 238
„ „ cum Belladonna et Strychnina	238
„ „ et Pepinse	... 238
„ Potassi Permanganatis	... 240
„ Quininæ	... 247
„ Terebinthinæ Chise	... 287
„ Warburgii	... 248
Pine Wool Felt	... 232
Pinol	... 232
Pinus	... 231
„ Canadensis	1, 233
„ Maritima	... 220
„ Picea	... 234
„ Pumilio	... 232
„ Sylvestris	... 231
Piper Betle	... 45
„ Methysticum	... 175
„ Nigrum	... 233
Piperazidine	... 233
„ Hydrochloride	... 234
Piperidine	... 233
Piperina	... 233
Piperonal	... 233
Pipamenthol	... 184
Pipasewa	... 74
Piscidia Erythrina	... 234
Piscidin	... 234
Pistacia Terebinthus	... 286
Pitayo Bark	... 82
Pitchbleode	... 294
Pix	... 234
Pix Burgundica	... 234
„ Canadensis	... 234
„ Carbonis Liquida Preparata	... 234
„ Liquida	... 235
Plasters, <i>see</i> Emplastræ.	
Plaster Mulla	... 193
„ Belladonna	... 54
„ Chrysarobin	... 45

	PAGE
Plaster Mulls Iodoform	... 162
" Mercury	... 143
" " with Carbolic Acid	... 142
" " Oxide of Zinc	... 142
" Resorcin	... 250
" Salicylic	... 17
Plaster, Salicylated	... 17
Plumbi Oleas	... 200
" Stearæ	... 201
Podophylli Resina	... 238
Podophyllie Acid	... 237
Podophyllin	... 236
Podophyllotoxin	... 237
Podophyllum Emodi	... 237
" Peltatum	... 236
Poison Ivy	... 232
" Oak	... 252
Poke Root	... 228
Polyporus Officinalis	... 24
Polysolve	... 201
Pomade, Chrysarobine	... 44
" Lanolin	... 178
Pomegranate	... 212
Poad's Extract	... 139
Pongamia Glabra	... 238
Pongamiae Oleum	... 238
Populus	... 255
Porcelain Clay	... 174
Porous Belladonna Plaster	... 54
Potash Alum	... 28
Potassæ Arsenitis Læquor	... 47
Potassii Benzozæ	... 239
" Cantharidas	... 310
" Chloræ	... 239
" Cobalto-Nitris	... 239
" Cyanidum	... 239
" Hypophosphis	... 225
" Nitræ	... 239
" Osmæ	... 13
" Permanganæ	... 240
" Phosphas	... 240
" Silicosæ	... 268
" Sosoiodol	... 270

	PAGE
Pulvia Ipecacuanhae sine Emetina	... 167
" Kaladanae Compositus	... 174
" Salicylicus cum Taleo	... 17
" Salinus Anticholericus	... 265
" Soda Tartaratae Effervescent	... 269
" Stramonii Compositus	... 273
Pumilina	... 292
" Extract	... 232
Pumilio Pine Oil	... 232
" " Soap	... 232
Punica Granatum	... 212
Pure Terebene	... 285
Purging Agaric	... 24
Purple Clover	... 291
Pussy Willow	... 256
Pyoktanin	... 35
" Blue	... 36
" Yellow	... 36
Pyridina	... 242
Pyridine, relation to Chlorine	... 88
Pyrocatechin, Methyl Ether of	... 101
Pyrodin	... 141
Pyrogallie Acid	... 15
Pyrogallol	... 15
Pyrogentisic Acid	... 153
Pyroligneous Oils	... 236
Pyrophosphoric Acid	... 223
Pyroxylon	... 96
Pyrrol	... 162

Q

Quebrachamine	... 243
Quebrachine	... 243
Quebracho	... 243
Quassia's Root	... 272
Queensland Fever Bark	... 28
Quaineti Sulphur	... 84
Quinetum	... 84
Quainidium Sulphur	... 243
Quainidine Sulphate	85, 243
Quinine	... 244

				PAGE
Quinines Arsenicas	...	...	...	... 244
" Bisulphas	...	...	...	... 248
" Carbolas	...	...	...	... 245
" Chloras	...	...	...	... 245
" Citras	...	...	...	... 245
" Disulphas	...	...	...	... 247
" Fluoridum	...	...	...	12, 245
" Hydriodas	...	...	...	... 246
" Hydriodidum	...	...	...	... 246
" Hydrobromas	...	...	...	... 245
" Acida	...	...	...	... 245
" Hydrochloras	...	...	...	... 246
" Acida	...	...	...	... 246
" Hydrofluosilicas	...	...	...	... 246
" Iodas	...	...	...	... 246
" Iodidum	...	...	...	... 246
" Lactas	...	...	...	... 216
" Murias	...	...	...	... 246
" Phosphas	...	...	...	... 246
" Salicylas	...	...	...	... 247
" Sulphas	...	...	...	... 247
" Acida	...	...	...	... 248
" (Neutral)	...	...	...	... 248
" Solubilis	...	...	...	... 248
" Sulphocarbolas	...	...	...	... 248
" Tannas	...	...	...	... 248
" Tartras	...	...	...	... 249
" Valerianas	...	...	...	... 249
Quinoídina	...	...	...	... 84
Quinol	...	...	...	... 153
Quinoline	...	...	...	... 75
" Salicylate	...	...	...	... 75
" Tartrate	...	...	...	... 75

R

Radix Glycyrrhizae	...	...	...	... 134
Raphidophora Vitensis	...	...	...	... 291
Rectified Ether	...	...	...	... 22
Red Bryony	...	...	...	... 61
" Bark	...	...	...	... 82
" Cinchona Bark	...	...	...	... 83

				PAGE
Red Gum	...	...	...	113
" Iodide of Mercury	...	...	...	144
" Oxide of Mercury	...	...	...	146
" Phosphorus	...	...	...	220
" Sandalwood	...	...	...	268
Regnauld's Anesthetic	...	...	...	80
Remijia Species	...	...	...	82
Rennet, Essence of	...	...	...	213
Resin of Kaladana	...	...	...	174
Resorcin	...	...	...	249
Resorcinol	...	...	...	249
Review of B. P. Additions	...	...	...	305
Rhamni Frangula Cortex	...	...	...	251
" Purshian Cortex	...	...	...	72
Rhamnus Frangula	...	...	...	251
" Purshianus	...	...	...	72
Rhigolene	...	...	...	32
Rhinacanthin	...	...	...	253
Rhinacanthus Communis	...	...	...	251
Rhus	...	...	...	252
" Coriaria	...	...	...	253
" Glabra	...	...	...	253
" Toxicodendron	...	...	...	263
Richardson's Styptic Colloid	...	...	...	96
Rosaniline Monohydrochloride	...	...	...	36
Rose Iodoform Ointment	...	...	...	162
Roseine	...	...	...	36
Rouge	...	...	...	123
Rubidium-Ammonium Bromide	...	...	...	30
Rubini's Camphor	...	...	...	66
Rumicin	...	...	...	253
Rumex	...	...	...	253
" Crispus	...	...	...	253
Rusot	...	...	...	66

S

Sabadine	...	...	...	...	296
Sabadinine	...	...	...	...	296
Saccharated Pepsin	...	...	...	...	214
Saccharinum	...	...	...	...	254
" Purissimum	...	...	...	...	254

	PAGE
Saccharinated Preparations ...	... 255
Saccharite of Cocaine ...	... 92
Sacred Bark ...	... 72
Safed Chandan ...	... 258
Safrol ...	... 185
Sal Alembroth ...	... 147
Sal Ammoniac ...	... 30
Salicinum ...	... 255
Salicyl-sulphonic Acid ...	... 317
Salicylate of Antipyrin ...	... 39
" β -Naphthol Ether ...	... 258
" Camphor ...	... 18
" Cresol ...	... 11
" Lithium ...	... 180
" Methyl ...	... 127
" Quinine ...	... 247
" Sodium ...	... 267
Salicylated Camphor Wool ...	... 18
" Icinglass Plaster ...	... 17
Salicylic Acid ...	... 16
" Collodion ...	... 17
" Gauze ...	... 17
" Lint ...	... 17
" Ointment ...	... 18
" Plaster Mulla ...	... 17
" Silk ...	... 17
" Suet ...	... 17
" Wool ...	... 17
Salicylol ...	... 256
Saliphonic Acid ...	... 317
Salipyrin ...	... 39
Salix Alba ...	... 255
" Nigra ...	... 256
Salol ...	... 256
" Camphor ...	... 257
Salolum ...	... 256
Salt, Digestive ...	... 218
Salufer ...	... 266
Salve Mulla ...	... 192
" Boric ...	... 4
" Carbolised ...	... 9
" Naphthol-Mercury ...	... 148
" Zinc ...	... 301

	PAGE
Sandal Wood ...	268
Sanguis Bovinus Exsiccatus ...	71
Sanitary Wood-Wool ...	232
Sanitas Preparations ...	163
Santali Oleum ...	268
Santalum Album ...	268
Santonate of Sodium ...	269
Santonica ...	259
Santonin ...	269
Santoninoxim ...	279
Santoninum ...	269
Sapo Acidi Carbolici ...	9
,, Creolin ...	102
,, Ichthyol ...	168
,, Lanolini ...	178
,, Mollis ...	260
,, Pini Pumilionis ...	232
,, Thymol ...	290
,, Viridia ...	260
Sassafras Officinale ...	185
Sassafray Bark ...	109
Sawdust, Eucalyptus ...	112
Saxoline ...	207
Schmiedeberg's Digitallein ...	105
,, Digitalin ...	105
Schizonecaulon Officinale ...	296
Sclerotic Acid ...	109
Sclerotinic Acid ...	109
Scopolia ...	260
,, Atropoides ...	260
,, Carniolica ...	156, 260
,, Japonica ...	260
Scopoleine ...	260
Scopuletin ...	260
Scotch Fir ...	231
Sea Wrack ...	126
Secale Cereale ...	107
,, Cornutum ...	107
Sealin ...	291
Seidlitz Powders ...	269
,, Saccharinated ...	255
Sennocarpus-Anacardium ...	36
Semen Phytostigmatis ...	226

	PAGE
Senna ... ... ... ... ...	... 261
" Pods ... ... ... ...	... 262
Sennse Legumina ... ... ...	... 262
Sidhee ... ... ...	... 63
Siegesbeckia Orientalis ... ...	... 263
Silicate of Aluminium ... ...	... 174
" " Magnesium ... ...	... 174
" " Potassium ... ...	... 268
" " Sodium ... ...	... 268
Silico-Fluoride of Sodium ... ...	... 265
Silk, Carbolised Ligature ... ...	... 7
" Salicylic ... ...	... 17
Simulo ... ... ...	... 263
Smelling Salts, Carbolised ... ...	... 9
" " Eucalyptus ... ...	... 113
Smilax Sarsaparilla ... ...	... 273
Snuff, Capsicum ... ...	... 69
" Ferrier's ... ...	... 59
" Iodoform ... ...	... 160
" Salicylate of Sodium ... ...	... 267
Soap, Carbolic ... ...	... 9
" Creolin ... ...	... 102
" Ichthyol ... ...	... 158
" Green ... ...	... 260
" Lanolin ... ...	... 178
" Pumilio Pine ... ...	... 232
" Soft ... ...	... 260
" Thymol ... ...	... 290
Soda-Mint Tablets ... ...	... 286
Sodii Arsenias ... ...	... 264
" et Auri Chloridum ... ...	... 61
" Benzoas ... ...	... 264
" Bromidum ... ...	... 264
" Cantharidae ... ...	... 310
" Carbolatis Liquor ... ...	... 9
" Chloras ... ...	... 265
" Citras ... ...	... 265
" Cresotinas ... ...	... 266
" Dithio-Salicylas ... ...	... 268
" Ethylas ... ...	... 265
" Fluoxilicas ... ...	... 265
" Hipparas ... ...	... 266
" Hypophosphis ... ...	... 236

	PAGE
Sodii Hyposulphite ...	... 266
" Iodidum ...	... 266
" Nitrits ...	... 266
" Paracresotan ...	... 266
" Permanganate ...	... 240
" Phenatis Liquor ...	... 9
" Phosphorus ...	... 267
" Effervescent ...	... 267
" Exsiccata ...	... 267
" Salicylate ...	... 267
" Salicyl-sulphonate ...	... 268
" Santonate ...	... 259
" Santonin ...	... 259
" Silicate ...	... 268
" Sulphite ...	... 269
" Effervescent ...	... 269
" Sulphethylate ...	... 270
" Sulphite ...	... 266
" Sulphocarbolate ...	... 269
" Sulpho-ichthyolate ...	... 168
" Sulpho-ricinoleate ...	... 201
" Sulphovinate ...	... 270
" Taurocholate ...	... 269
Sodium ...	... 264
" -Ichthyolate ...	... 168
" -Sesquiodol ...	... 270
" -Theobromine ...	... 288
" Tungstate Pellets ...	... 318
Soft Bark ...	... 82
" Paraffin ...	... 207
Solid Paraffin ...	... 206
Soluble Glass ...	... 268
" Gluaside ...	... 254
" Phenylate ...	... 102
" Saccharin ...	... 254
Solutio Sodii Phenatis ...	... 9
Solvine ...	... 201
Somnol ...	... 295
Sonstadt's Solution ...	... 323
Sesquiodol ...	... 270
Sesquic Acid ...	... 48
Sparteine Sulphite ...	... 271
Sparteine ...	... 271

	PAGE
Specific Gravity of Urine	316
Spermine	234, 304
" Hydrochlorate	304
Sphaeroclinic Acid	108
Sphagnum	271
Spindle Tree	115
Spirit of Tar	235
Spiritus Aetheris	22
" " Compositus	22
" " Nitroci	22
" Ammoniae Aromaticus	32
" Fortidus	32
" Camphorae	66
" Chloroformi	81
" Gaultheriae	127
" Nucis Juglandis	173
" Thymoli	290
Sponges, Artificial	135
Spraya, <i>see</i> Nebulæ.	
Squaw Root	74
Staphisagriae Oleum	272
" Semina	272
Stavesacre Seed	272
Stearate of Lead	201
Steel Drops	122
Sterculia Acuminata	176
" Cordifolia	177
Stevens' Anticholera Powder	265
Stigmata of Maize	181
Stillingia	272
" Sylvatica	272
Stillingia	273
Stillingia	272
Stone Root	95
Stramopii Folia	273
Stramoniæ Semina	273
Stramonium	273
Strophantidin	275
Strophantidin	274, 275
Strophanthus	274
" Hispidus	274
Strychnia	275

Strychnine Acetas	...	...	...	...	277
" Aescinias	...	...	...	...	277
" Hydrobromas	...	...	...	...	277
" Nitras	...	...	...	...	277
" Sulphas	...	...	...	...	278
" " Acida	...	...	...	...	278
Strychnine Colubrina	...	...	...	...	278
" Ignatii	...	...	...	...	278
" Ligustrina	...	...	...	...	278
" Nux Vomica	...	...	...	...	278
Styptic Colloid	...	...	...	...	96
" Lint	...	...	...	...	122
" Wool	...	...	...	...	122
Subjee	...	...	...	...	67
Sublimate Gauze	...	...	...	...	147
" Lint	...	...	...	...	147
" Lotiforms	...	...	...	...	147
" Wool-Wool	...	...	...	...	147
" Wool	...	...	...	...	147
Sublimed Sulphur	...	...	...	...	281
Succinate of Iron	...	...	...	...	125
" Potassium	...	...	...	...	240
Succinimide of Mercury	...	...	...	...	149
Succus Acalypae	...	...	...	...	3
" Alterans	...	...	...	...	273
" Andrographis Concentratus	...	...	...	...	176
" Belladonna	...	...	...	...	66
" Cineraria	...	...	...	...	81
" Papaya	...	...	...	...	206
" Rhinanthi	...	...	...	...	262
Suet, Salicylic	...	...	...	...	17
Sugar-Coated Pills	...	...	...	...	311
" Tests for, in Urine	...	...	...	...	316
Sulphaldehyde	...	...	...	...	210
Sulphamino	...	...	...	...	283
Sulphatos, Syrup of	...	...	...	...	66
Sulphethylate of Sodium	...	...	...	...	270
Sulphocarbolate of Quinine	...	...	...	...	248
" " Sodium	...	...	...	...	269
" " Zinc	...	...	...	...	302
Sulpho-carbolic Acid	...	...	...	...	48
Sulphocyanide Test	...	...	...	...	318
Sulpho-Ichthyolate of Ammonium	...	...	...	...	187

		PAGE
Syrupus Ferri Bromidi	...	120
" "	" cum Strychnina	120
" "	et Quinine Hydrobromat-	
" "	um	120
" "	Quinine et Strychnine Hy-	
" "	drobromatum	120
" "	Hypophosphitis	225
" "	Iodidi	121
" "	Lactatis	122
" "	Phosphatis	124
" "	" Compositus (Che-	
" "	mical Food)	124
" "	" cum Manganesio	124
" "	" cum Quinina et	
" "	Strychnina (Eas-	
" "	ton's Syrup)	124
" "	Protochloridi	305
" "	et Quinine Citratis	245
" "	Quinine et Strychnine Phos-	
" "	phatum	124
" "	Subchloridi	123, 305
" "	Hypophosphitum Compositus	225
" "	Ipecacuanhae Aceticus	168
" "	Pleis Liquida	235
" "	Rhamni Frangulae	251
" "	Sennae	262
" "	Sodii Hypophosphitis	225
" "	Sulphatum	65
" "	Trifolii	291
" "	Compositus	291
Syzygium Jambolanum	...	172

T

Tabellae	...	...	...	...	283
"	Ammonii Chloridi	...	...	...	30
"	Antipyrin	...	...	...	38
"	Cocainae	...	...	...	89
"	Nitroglycerini	...	...	...	198
"	Saccharini	...	...	...	255
"	Saponanthi	...	...	...	275
"	Tymintrini Compositae	...	...	...	198

				PAGE
Tabelle Zymia ...	...	...	...	203
Tablet Triturates	...	...	...	285
Tablets, Antiseptic	...	...	...	147
Compressed, List of	...	...	...	284
Tests for	...	...	...	322
Hypodermic, List of	...	...	...	308
Acid Sclerotic	...	...	...	109
Aconitine	...	...	...	309
Apoenorphine	...	...	...	43
Atropine...	...	...	...	50
" with Morphine	50,	...	...	191
Caffeine ...	...	...	...	63
Cocaine ...	...	...	...	92
Codeine Phosphate	...	...	...	94
Colchicine	...	...	...	95
Corntutine	...	...	...	109
Curare ...	...	...	...	103
Digitalin	...	...	...	105
Ergotinine	...	...	...	109
Homatropine	...	...	...	51
Hyoscine	...	...	...	156
Hyoscyamine	...	...	...	155
Mercury Perchloride	...	...	...	146
Morphine Mecenate	...	...	...	190
" Sulphate	...	...	...	191
" with Atropine.	191	...	...
Pilocarpine	...	...	...	171
Physostigmine	...	...	...	227
Quinine Hydrobromate..	...	...	...	246
Sparteine Sulphate	...	...	...	271
Strophanthin	...	...	...	275
Strychnine	...	...	...	277
Talc ...	...	...	...	175
Tampons, Vaginal	...	...	...	135
Tannate of Cannabin	...	...	...	68
Tar ...	...	...	...	235
Ointment	...	...	...	235
Water	...	...	...	235
Tartarated Iron	...	...	...	125
Tasteless Aperient Salt	...	...	...	267
Cascara Sagrada	...	...	...	73
Taurocholate of Sodium	...	...	...	289
Tea ...	...	...	...	62

	PAGE
Telae ...	128
Tellicherry Bark ...	140
Tellurate of Potassium ...	241
Terechloride of Formyl ...	79
Terebena Pura ...	283
Terebene ...	285
Terebinthina Chia ...	286
Terpene Hydrate ...	286
Terpin Hydrate ...	286
Terpinol ...	286
Terra Cimolia ...	174
Tertiary Amyl Alcohol	33
Nitrite ...	33
Test Papers ...	319
Testing, General ...	320
" Urinary ...	314
Tetano-Cannabine ...	68
Tetrachloride of Carbon ...	70
Tetrachloromethane ...	70
Tetrahydroparamethyl oxychinoline ...	287
Tetra-Iodo-Pyrrol ...	162
Tetra-Nitro-Cellulose ...	96
Tetronal ...	281
Thallium Sulphas ...	287
Thalline ...	287
Sulphato ...	287
Tartrate ...	288
Theine ...	62
Theobroma Cacao ...	288
Theobromina ...	288
Theobromine Sodio-Salicylate ...	288
Therapeutic Index ...	326
Thermifugin ...	289
Thermometric Scales ...	325
Thialdehyde ...	210
Thiersch's Antiseptic Solution ...	6
Thiocamf ...	283
Thiol ...	154
Thio-oxydiphenylamine ...	283
Thioresorcin ...	260
Thuja Occidentalis ...	287
Thyme ...	289
Thymol ...	289

			PAGE
Thymol-Acetate of Mercury	...	...	149
Thymolite	...	...	174
Thymus Vulgaris	...	...	289
Thymylic Alcohol	...	...	289
Tinctura Adonis	...	...	21
" Agarici	...	...	24
" Aletris	...	...	26
" Alstoniae	...	...	27
" " Constrictae	...	...	28
" Anacardii	...	...	35
" Andrographis Composita	...	...	176
" Apocyni	...	...	42
" Azadirachtae	...	...	52
" Belladonnae	...	...	55
" " Ætherea	...	...	54
" Berberis	...	...	56
" Bhawchee	...	...	57
" Boldo	...	...	59
" Bryoniae	...	...	61
" Camphoræ Composita	...	...	66
" Cannabis Indicae	...	...	68
" Capsici	...	...	69
" " Fortior	...	...	69
" " Ætherea	...	...	69
" Chloroformi Composita	...	...	81
" " et Morphinae	...	...	81
" Cinchonæ	...	...	84
" " Composita	...	...	84
" Collinsoniae	...	...	95
" Condurango	...	...	97
" Convallariae	...	...	96
" Coto	...	...	99
" Daturæ	...	...	274
" Droseræ	...	...	105
" Ergotæ	...	...	107
" " Ammoniata	...	...	108
" Erythrophloei	...	...	110
" Eucalypti Foliorum	...	...	111
" Euonymi	...	...	115
" Euphorbia Pilularis	...	...	116
" Ferri Acetatis	...	...	119
" " Ætheræ	...	...	119
" " " Perchloridi	...	...	122

		PAGE
Tinctura Ferri Pomata	...	118
" Gelsemii	...	130
" Gossypii	...	136
" Guaranae	...	137
" Gummi Rubri	...	114
" Holarrhene Seminum	...	141
" Hydrastis	...	130
" Iodi	...	164
" " Etheraea	...	165
" " Decolorata	...	165
" " " Fortior	...	166
" Iodirei, P. E.	...	165
" Jaborandi	...	170
" Kaladane	...	174
" Lupulini	...	181
" Lycopodii	...	181
" Menthol Etheraea	...	185
" Mugreal	...	197
" Naragamite	...	169
" Nigelle	...	197
" Phosphori Composita	...	220
" Physostigmatis	...	227
" Phytolacceae	...	229
" Podophylli	...	237
" " Ammoniata	...	237
" " (Dobell's)	...	237
" Pom. Ferrati	...	118
" Pubescentiae	...	241
" Quebracho	...	243
" Quinine	...	246
" " Ammoniata	...	248
" Rhols	...	252
" Ruminis	...	253
" Saponis Viridia	...	260
" Scopolae	...	261
" Sennae	...	262
" Siegesbeckiae	...	263
" Simulo	...	263
" Strophanthi	...	275
" Thujae	...	287
Tincture of Phenol-phthalein	...	321
" Steel	...	123
" Warburg's	...	249

	PAGE
Tinctures, Ethereal	69
Tinnivelly Senna	261
Tissue, Gangee's	128
,, Gauze and Cotton-Wool	128
Touchwood	24
Tong-Pang-Chong	251
Tonga	290
Tonic Laxative Granules	54
,, Liver Granules	238
Tonka Beans	99
Tow, Carbolised	7
Tribromo-acetic-ortho-Aldehyde	60
Tribrombydrin	27
Tribromo-Methane	60
Tribromphenol	9
Tribromo-Propane	27
Tribulus Terrestris	135
Trichloroacetic Acid	318
Trichloraldehyde-phenyl-dimethyl-pyrazole ...	157
Trichloro-acetic-ortho-Aldehyde	75
Trichloro-Methane	79
Trichlorophenic Acid	9
Trichlorphenol	9
Trifolie	169
Trifolium	291
,, Pratense	291
Trimethyl-Acetyl-Colchicinic Acid	95
Trimethylamine	291
,, Hydrochloride	186
Trimethylamina	291
Trimethylamine Hydrochlorate	292
Trinitrin	197
Trinitro-cellulose	96
Trinitro-phenic Acid	14
Trinitro-phenol	14
Trional	28
Tristearin	126
Trithialdehyde	210
Triticum	292
,, Repens	292
Trochisci Acidii Carbolicii	10
,, Ammonii Bromidi	30
,, Chloridi	30

	PAGE
Trochisoi Antacidi	59, 307
" Bismuthi	59
" Camphorse	66
" Cascara Sagrada	72
" Cocaine Hydrochloratis	92
" Codeinæ	94
" Eucalypti Compositi	114
" Ferri Carbonatis Saccharatæ	120
" Redacti	118
" Fructus Aperientes	261
" Gummi Rubri	114
" Ipocacuanhae	168
" Morphinæ	190
" et Emetin	169
" et Ipocacuanhae	190
" Papain et Cocaine	206
" Phenacetini	216
" Santonini	259
" et Calomelanos	259
" Sodii Chloratis	265
" Sulphonal	279
" Sulphuris	282
Tropineoline OO	323
Tropineines	49
Tropic Acid	49
Tropine	49
True Unicorn	26
Trypsin	203, 205
Tuberculin	309
Turbith	293
Turkey Red Oil	203
Turnera Aphrodisiaca	104
Turpentine Camphor	286
Turpentine, Oil of	231
" " French	220
Turpeth	293
" Mineral	148
Turpethic Acid	293
Turpethin	293
Turpetholic Acid	293
Turpethum	293
Tympana, Artificial	96

U

	PAGE
<i>Ulex Europaeus</i>...	... 293
<i>Ulexina</i> ...	... 293
<i>Ulexinæ Hydrobromas</i> ...	... 294
" <i>Hydrochloras</i> ...	... 294
" <i>Nitras</i> ...	... 294
<i>Ultra-Quinine</i> ...	... 83
<i>Unguentum Acidi Borici</i> ...	... 4
" " <i>Carbolici</i> ...	... 10
" " <i>Pyrogallici</i> ...	... 15
" " <i>Salicylici</i> ...	... 18
" <i>Aconitine</i> ...	... 20
" <i>Anacardii</i> ...	... 35
" <i>Aristol</i> ...	... 46
" <i>Atropine</i> ...	... 49
" <i>Belladonnæ</i> ...	... 55
" <i>Bismuthi</i> ...	... 59
" <i>Calamine</i> ...	... 299
" <i>Chrysarobini</i> ...	... 44
" <i>Cocaine</i> ...	... 89
" <i>Cocculi</i> ...	... 231
" <i>Creasoti</i> ...	... 101
" <i>Dephine</i> ...	... 272
" <i>Diachyli</i> ...	... 201
" <i>Eucalypti</i> ...	... 112
" <i>Gaultherie</i> ...	... 127
" <i>Glycerini Plumbi Subacetatis</i> ...	... 132
" <i>Gynocarsiae</i> ...	... 138
" <i>Hamamelidis</i> ...	... 140
" <i>Hydrargyri</i> ...	... 142
" <i>Ammoniati</i> ...	... 143
" <i>Compositum</i> ...	... 142
" <i>Iodidi Rubri</i> ...	... 144
" " <i>Dilutum</i> ...	144
" " <i>Viridis</i> ...	145
" " <i>Nitratis</i> ...	145
" " <i>Dilutum</i> ...	145
" " <i>Oxidi Flavi</i> ...	145
" " <i>Rubri</i> ...	146
" " <i>Persulphatis</i> ...	148
" " <i>Subchloridi</i> ...	148
" <i>Iodi</i> ...	... 164

	PAGE
Unguentum Iodoformi...	... 161
" " <i>cum Atropina</i>...	... 162
" " <i>et Eucalypti</i> ...	... 162
" " <i>Roseatum</i> ...	... 162
" <i>Kaolin</i> ...	... 174
" <i>Naphtholi</i> ...	... 195
" <i>Oleo-Besinae Capsici</i> ...	... 69
" <i>Olei Cadini</i> ...	... 236
" <i>Ozonicum</i> ...	... 163
" <i>Paraffinum</i> ...	... 207
" <i>Picea</i> ...	... 235
" <i>Pierotoxini</i> ...	... 230
" <i>Scopolæ</i> ...	... 261
" <i>Staphisagriae</i> ...	... 272
" <i>Sulphuris</i> ...	... 281
" " <i>Compositum</i> ...	... 282
" " <i>Hypochloritis</i> ...	... 283
" <i>Thymol</i> ...	... 290
" <i>Vaseline Plumbicum</i> ...	... 201
" <i>Verrutrine</i> ...	... 297
" <i>Zinci</i> ...	... 301
" " <i>Compositum</i> ...	... 301
" " <i>Oleati</i> ...	... 201
Ural ...	... 295
Uralium ...	... 295
Uranii Nitras ...	... 294
Urates ...	... 316
Urea Test ...	... 319
Urethane ...	... 294
Uric Acid ...	... 316
Urinary Colour Tables ...	... 315
" <i>Sediments</i> ...	... 316
" <i>Testing</i> ...	... 315
Urinometers ...	... 316
Ustilago Maidis ...	... 295

V

Vaginal Tampons ...	... 135
Valvarung ...	... 106
Valentine's Meat Juice ...	... 71

	PAGE
Valerianate of Iron ...	125
,, Quinine ...	249
,, Zinc ...	302
Valerianic Acid ...	34
Vanilla ...	296
,, Planifolia	296
Vanillic Acid ...	296
Vanillin ...	296
Vapor Acidi Carbolici ...	10
,, Aldehydi	26
,, Coninæ ...	93
,, Creasoti ...	101
,, Eucalypti	112
,, Iodi ...	164
,, „ Aetherus ...	166
,, „ cum Conio ...	164
,, Olei Pini Sylvestris	231
,, Terebennæ	286
,, Thymol ...	290
Varnishing Pills ...	311
Vaseline ...	207
Vaselinum ...	207
,, Album	208
,, Cocainæ	89
,, Iodoformi	162
Vegetable Mercury ...	236
Vellarin ...	151
Venetian Talc ...	176
Veratria ...	296
Veratrina ...	296
Veronica Virginica ...	178
Viburnum Fortidum ...	207
,, Prunifolium	297
Vienna Paste ...	211
Vinolia ...	178
Vinum Carnis ...	71
,, „ cum Ferro	71
,, Cocco ...	87
,, Condurango ...	97
,, Ferri ...	118
,, „ Citratis...	121
,, Iodi ...	166
,, Ipecacuanphas ...	168

				PAGE
Vinum Peppermint...	...	...	...	215
" Quinine...	...	...	...	248
Vitis Alba	...	...	...	60
Violet Powder	...	...	...	175
Volcanic Ammonia	...	...	...	29
Volkman's Solution	...	...	...	290

W

Wahoo Bark	...	...	...	115
Walnut	...	...	...	173
Warburg's Tincture	...	...	...	248
Washed Sulphur	...	...	...	282
Water Glass	...	...	...	268
Weaver's Periodates	...	...	...	166
Weights and Measures	...	...	...	324
Whin	...	...	...	294
White Adepsine	...	...	...	208
" Agaric	...	...	...	24
" Arsenic	...	...	...	47
" Bismuth	...	...	...	58
" Bryony	...	...	...	60
" Fuller's Earth	...	...	...	174
" Peat	...	...	...	175
" Precipitate	...	...	...	142
" Quebracho	...	...	...	243
" Vaseline	...	...	...	208
" Walnut	...	...	...	173
Wild Indigo	...	...	...	52
Wilkinson's Ointment	...	...	...	282
Willow Bark	...	...	...	205
Wines, <i>see</i> Vina.				
Wintergreen Oil	...	...	...	127
Witch Hazel	...	...	...	139
" Bark	...	...	...	139
Wood Oil	...	...	...	52
" Tar	...	...	...	235
" Wool, Sanitary ...	...	...	...	232
" " Sublimated	...	...	...	147
" " Wadding	...	...	...	232
Wool, Alembroth	...	...	...	147
" Boric	...	...	...	4

	PAGE
Wool Carbolised	... 7
,, Eucalyptus	... 112
,, Fat ...	... 178
,, Hydrous	... 177
,, Fir ...	... 232
,, Iodised	... 166
,, Iodoform	... 163
,, Salicylated Camphor	... 18
,, Salicylic	... 17
,, Sosotiodol	... 271
,, Sublimated	... 147
,, Thymol	... 290
<i>See also Cotton and Gossypium</i>	
Wound Pads	... 135
Wourara ...	... 102

X

Xylene ...	... 297
Xylol ...	... 297
Xanthine	... 62
Xanthoxylum Carolinianum ...	... 273

Y

Yellow Adepsaine	... 208
,, Bark ...	... 82
,, Dock	... 253
,, Iodide of Mercury	... 144
,, Jasmine	... 130
,, Oxide of Mercury	... 145
,, Parilla ...	... 183
,, Puccoon	... 149
,, Root	... 149
,, Santal Oil	... 258
Yerba Santa ...	... 299

Z

Zea Mays ...	... 181, 295
Zinc-Sosotiodol ...	... 271

	PAGE
Zinci Acetas	299
.. Bromidum	299
.. Carbonas	299
.. Chloridum	299
.. Citras	300
.. Cyanidum	300
.. Gelatum	129
.. Lactas	300
.. Nitræ	300
.. Oleas	201
.. Oxidum	300
.. Permanganas	301
.. Phosphidum	301
.. et Potassii Cyanidum	300
.. Sulphas	301
.. Sulphis	301
.. Sulphocarbolas	302
.. Sulpho-silthycolas	158
.. Valerianas	302
Zincum	298
Zymur	203

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